Coastal Assessment Survey
Solway North Coast

September and October 1996

Volume 2 of 3:
The middle part of the coast:
Crook of Baldoon to Dalbeattie
Map sets 20 to 39

A Report for HISTORIC SCOTLAND

by the CENTRE *for* FIELD ARCHAEOLOGY

THE UNIVERSITY OF EDINBURGH

MAP 20: CROOK OF BALDOON TO EAST OF WIGTOWN

Hinterland Geology and Coastal Geomorphology: This region contains land below 10m, part of the tidal reach of the River Bladnoch and the coast north towards Wigtown. The River Bladnoch meanders in a series of loops as far as Craig Hill. Salt-marsh protected by flood banks is a common feature along the river edge. The coastline north of Wigtown Castle is incised by drainage channels.

Erosion Class: Estuarine fine grained silts form banks at the side of the high tidal flats. These deposits are accreting at a steady rate. The disused harbour at Wigtown is partially in-filled with alluvial silt. The pattern of water movement, and the interaction of tidal currents and wave action, has important consequences for the transport on the tidal flats.

Built Heritage & Archaeology: This section includes a cluster of sites around the river Bladnoch, comprising a group of pillboxes and bunkers around the disused WW2 airfield at Baldoon; all surviving in good condition; a small cluster of various monuments at Bladnoch, including disused railway bridge stands, a flood bank system and a standing stone; and another small group of sites around the periphery of Wigtown. The Wigtown sites comprise the remains of the Castle, the recently renovated harbour and the Martyrs Stake. All three sites in this group survive in good condition. No sites in this section are threatened by coastal erosion. Local tradition maintains that the early medieval town occupied a site more than a mile eastward, on what is now the Wigtown Sands (Graham, 1979, 66). The shifting course of the river Bladnoch, has historically (Graham, 1979, 66), had a detrimental effect on passage to the later harbours. In regard to this dynamic aspect of this part of the coastline, a long term monitoring programme should possibly be recommended.

Map 20: Hinterland Geology and Coastal Geomorphology

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1. INERWELL PLANTATION to CROOCK OF BALDOON
NX 447 540
4.5km
Low edge (< 5m)
Saltmarsh and sand and mud flats
Marine or lower estuary of Wigtown Bay. dominated by salt-marsh on the hinterland. The foreshore is sandy intermixed with mud in parts.

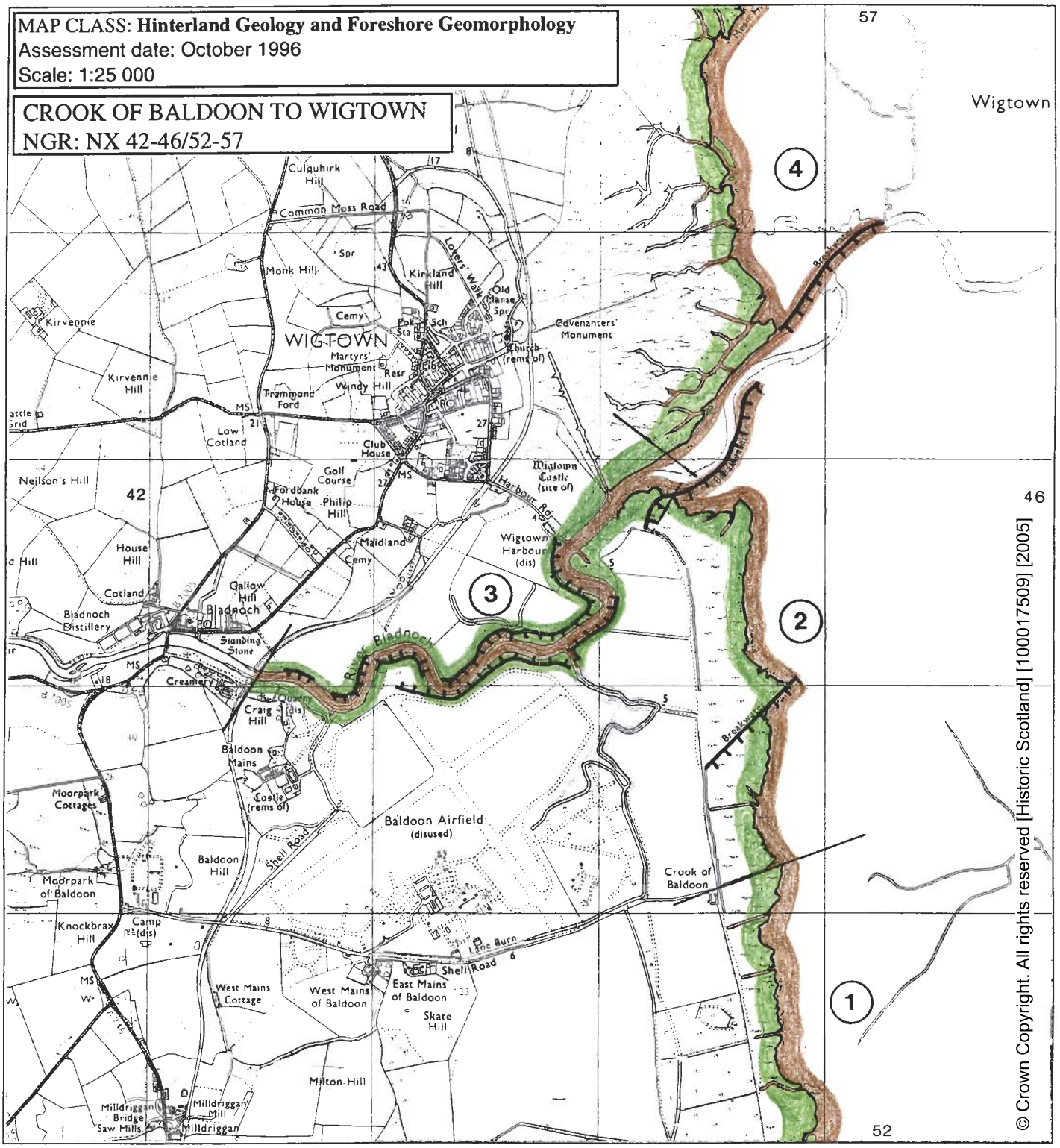
2. CROOK OF BALDOON to CRAIGHILL
NX 447 540
4km
Low edge (<5m)
Salt marsh and estuarine mud
Saltmarsh incised with drainage channels protected by breakwaters towards the south. The meandering River Bladnoch is incised with small creeks with well developed saltmarsh.

3. CRAIGHILL to east of WIGTOWN CASTLE
NX 435 542
2.5km
Low edge (< 5m)
Saltmarsh on meandering low river edge
The hinterland north of the River Bladnoch is protected by flood banks. The shoreline is alluvial silt mainly brought down as suspended sediment down the River Bladnoch.

4. East of WIGTOWN CASTLE to east of BARSALOCH FARM
NX 464 560
5km
Low edge (< 5m)
Estuarine saltmarsh and tidal mudflats
dissected by a network of drainage channels. The foreshore is exclusively estuarine mud.

MAP CLASS: **Hinterland Geology and Foreshore Geomorphology**
Assessment date: October 1996
Scale: 1:25 000

CROOK OF BALDOON TO WIGTOWN
NGR: NX 42-46/52-57



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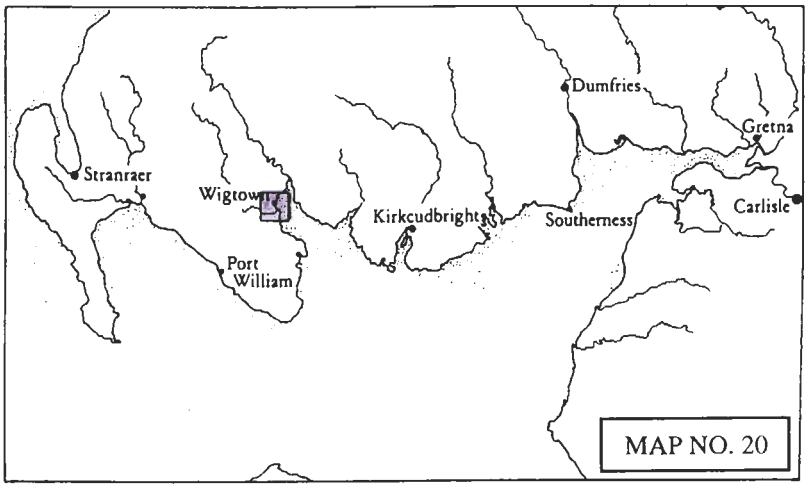
KEY

Hinterland Geology	Derwent Code	Colour
Drift, boulder clay	French Grey	
Drift, boulder clay over visible rock	Dark Violet	
Raised beach and marine deposits	Golden Brown	
Blown sand	Pink Madder Lake	
Glacial sand and gravel	Magenta	
Alluvium	Emerald Green	
Coastal Geomorphology		
Mainly rock platform	Deep vermilion	
Mainly sand	Ultramarine	
Mainly alluvial/marine mud	Venetian Red	
Marsh	May Green	
Coast Edge		
Low edge (<5m)	Thin black line	
Cliff (>5m)	Solid black line	
Man made barrier	Black line with spines	
Shingle beach	Small circles	oooooo
Human disturbance	Black carats	^^^^^^



MAP NO. 20

MAP 20: EROSION

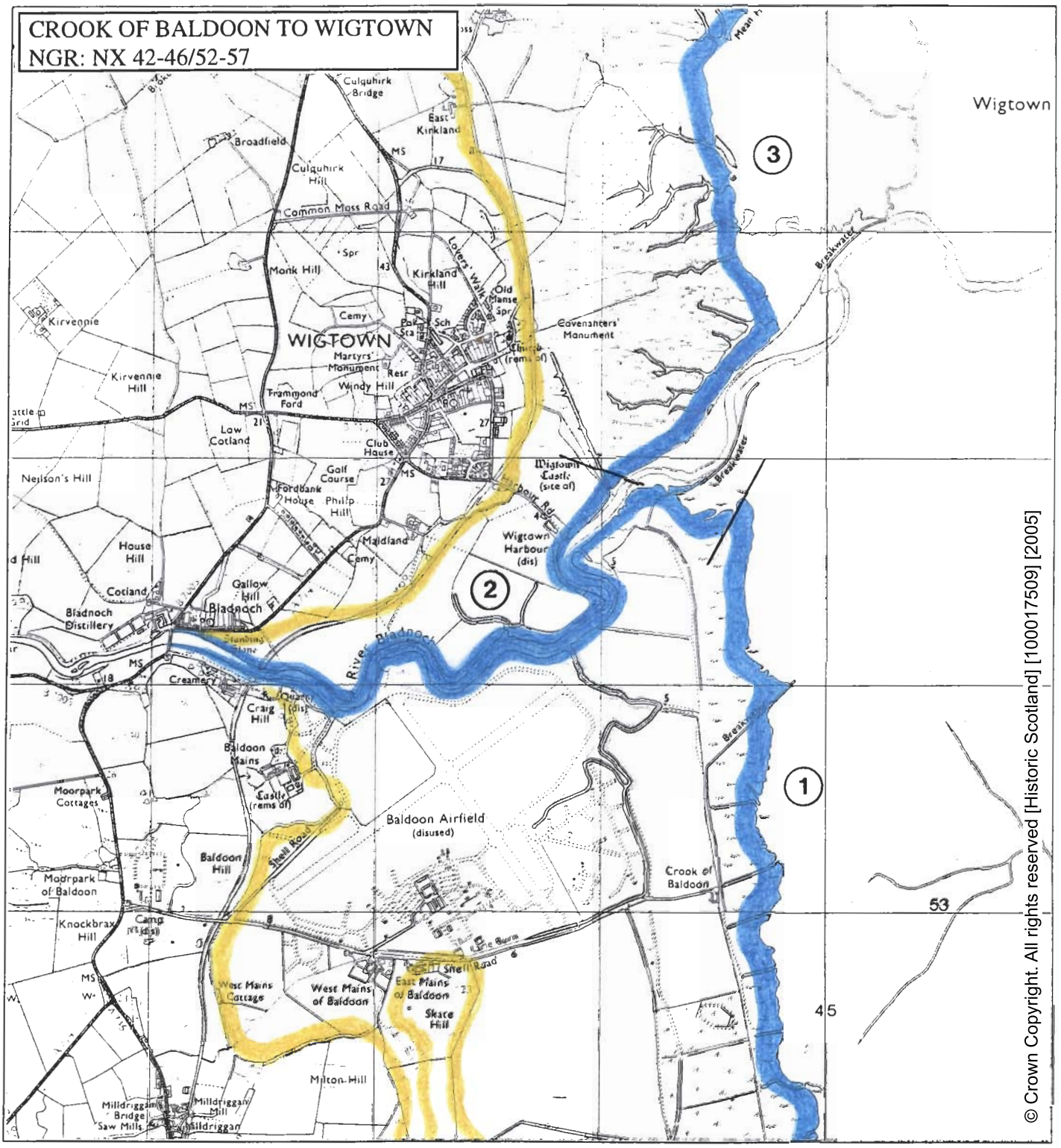
---

1. North of CHAPEL HILL
NX 450 520
5km
Both accreting and stable
This region forms the lower estuary of Wigtown Bay and is a salt marsh (Merse) formed from the reclamation of alluvium development. Breakwaters have been employed to reduce sediment drift along the coastal edge. Drains intersect the marsh at regular intervals. Mud is accreting forming steep banks. Arcuate slope failure on the inner channel edges near the HWM shows that this region is dynamic and prone to occasional erosion.

2. East of WIGTOWN HARBOUR to the north of WIGTOWN HARBOUR via BLADNOCH BRIDGE
NX 435 540
4.8km
Accreting or stable
This unit takes in Wigtown harbour that is silting up due to none use. The banks of this tidal section is defended by earthwork floodbanks. The river channel meanders and estuarine mud is accreting on its banks. This is presumably derived from high sediment loads brought down and back up from outside the River Bladnoch. Channel abrasion appears to be minimal at the moment.

3. North of WIGTOWN HARBOUR to north-west of BARSALLOCH FARM
NX 453 575
6.6km
Accreting or stable
This unit is a saltmarsh formed by the formation of alluvium on the east side of the River Cree estuary. This wide stretch of marsh is deeply incised by drainage channels. In places arcuate slope failure is occurring on the edge of some of the channels. Due to the high sediment loading the general trend for this region is accretion.

CROOK OF BALDOON TO WIGTOWN
NGR: NX 42-46/52-57



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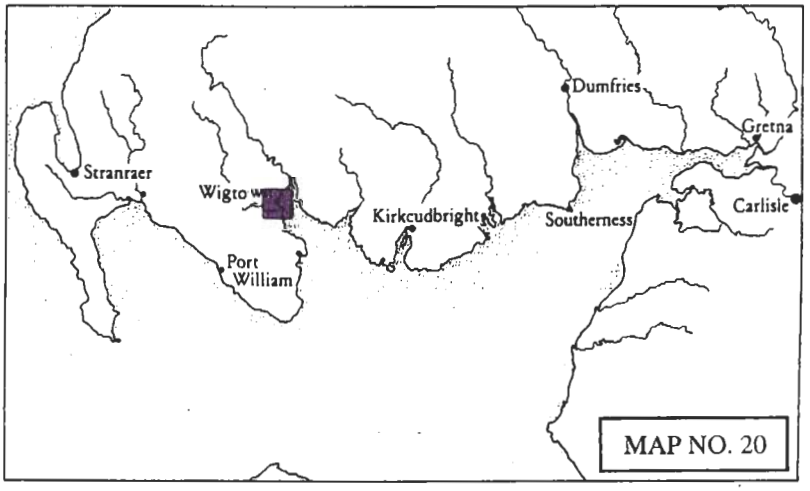
KEY

Erosion class	Derwent Code	Colour
Definitely accreting	Prussian Blue	
Accreting/stable	Light Blue	
Stable	Grass Green	
Stable/eroding	Deep Chrome	
Definitely eroding	Deep Vermilion	
Both accreting and eroding	Imperial Purple	
No access	Blank	
Land below 10m	Straw Yellow	

MAP CLASS: **EROSION**
Assessment date: 01.10.96
Scale 1:25 000



MAP 20: BUILT HERITAGE AND ARCHAEOLOGY

Sites on the Coast Edge & Foreshore

NX 4244 5400
BLADNOCH
Disused Railway Bridge Stands
19/20th century
Fair
Nil

NX 4246 5408
BLADNOCH
Disused Railway Bridge Stands
19/20th century
Fair
Nil

NX 4270 5404
BLADNOCH
Flood Bank System
20th century
Good
Nil

NX 4380 5462
WIGTOWN
Harbour
19/20th century
Good
Nil

Sites in the Hinterland

NX 4331 5396
BALDOON AIRFIELD
WW2 Building
Mid 20th century
Good
Nil

NX 4344 5406
BALDOON AIRFIELD
WW2 Pillbox
Mid 20th century
Good
Nil

NX 4364 5411
BALDOON AIRFIELD
WW2 Pillbox
Mid 20th century
Good
Nil

NX 4275 5385
BALDOON AIRFIELD
WW2 Bunker
Mid 20th century
Good
Nil

NX 4235 5423
BLADNOCH
Standing Stone
3rd/2nd Mill BC
Good
Nil

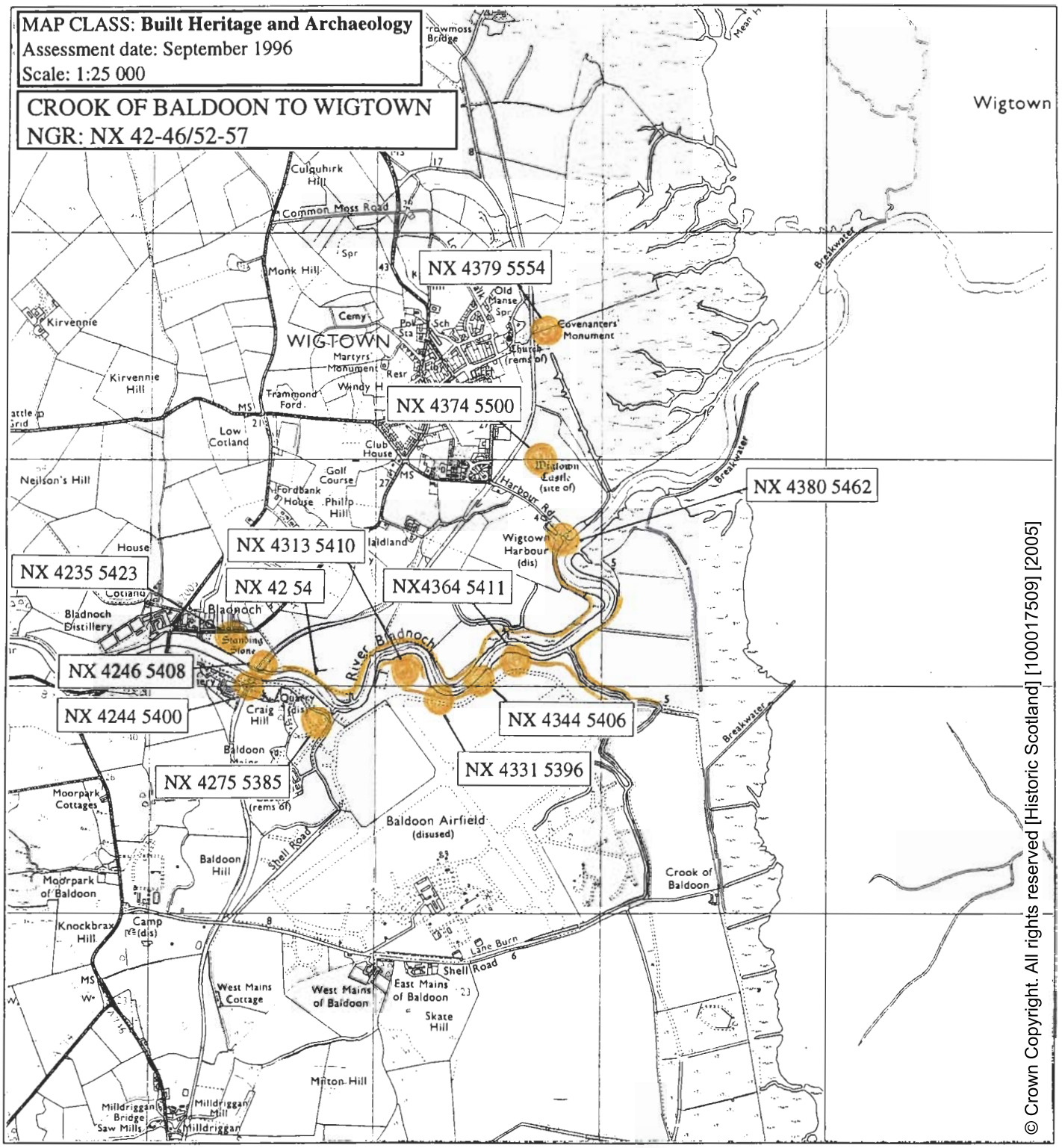
NX 4374 5500
WIGTOWN
Site of Castle
Uncertain
Good
Nil

NX 4379 5554
MARTYRS STAKE,
WIGTOWN
Covenanters Monument
Uncertain
Good
Nil

NX 4313 5410
BALDOON AIRFIELD
WW2 Pillbox
Mid 20th century
Good
Nil

MAP CLASS: **Built Heritage and Archaeology**
Assessment date: September 1996
Scale: 1:25 000

CROOK OF BALDOON TO WIGTOWN
NGR: NX 42-46/52-57



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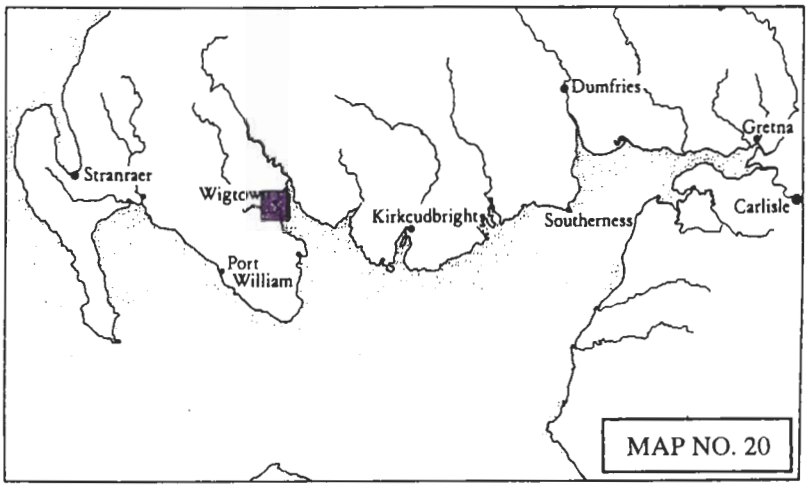
KEY

Site location	Symbol	Colour	Significance
NGR ref. - eg. NX 143 368	Roundel - Solid, (or area)	Red	Protected Ancient Monument
	Cross	Red	Listed Historic Building
	Roundel - Open, (or area)	Red	Monument formally proposed by Historic Scotland for designation
	Roundel - Solid, (or area)	Yellow	Other known Ancient Monument
NMRS ref. - eg. NX13 SW17	Dashed outline	Yellow	Gardens/Designed landscape
	Roundel - Solid, (or area)	Yellow	Undesignated wreck
	Area	Green	Insufficient information; more work needed
	Area	Blue	Probably archaeologically sterile



MAP NO. 20

MAP 21:WIGTOWN TO GRANGE OF CREE

Hinterland Geology and Coastal Geomorphology: The main characteristics within this region of the coastline are flat featureless salt-marsh overlooking Wigtown Sands. The salt-marsh is protected in parts by breakwaters. A network of small creeks fill with seawater on flood tides. In the region of Scour Fishery a breakwater protects a promontory headland. This overlooks river channels towards the Grange of Cree. The land immediately behind the marsh is very flat and lies below 5m O.D.

Erosion Class: This stretch of coastline is accreting with estuarine mud and silts due to the high incidence of suspended sediments circulating within the upper tidal reaches of Wigtown Bay. Tidal conditions and the sediment trapping qualities of salt-marsh play a role in the deposition of mud in the region. Because the coastal topography is composed of poorly consolidated clays, silts and sands, which are highly mobile, it is likely that the line of the creeks will change, particularly after very heavy rain, or spring ice-melt. This makes it very difficult to say whether or not the coast is stable, because it is continually changing its shape.

Built Heritage & Archaeology: A sparse, scattered distribution of sites are included in this section. Fishing stake nets, a common feature in the area, survive in Wigtown Sands, in a good condition. A breakwater and a bridge survive near Barsalloch Farm; the former requires monitoring due to the detrimental and combined effect of the tide and flooding caused by upland drainage.

Map 21: Hinterland Geology and Coastal Geomorphology

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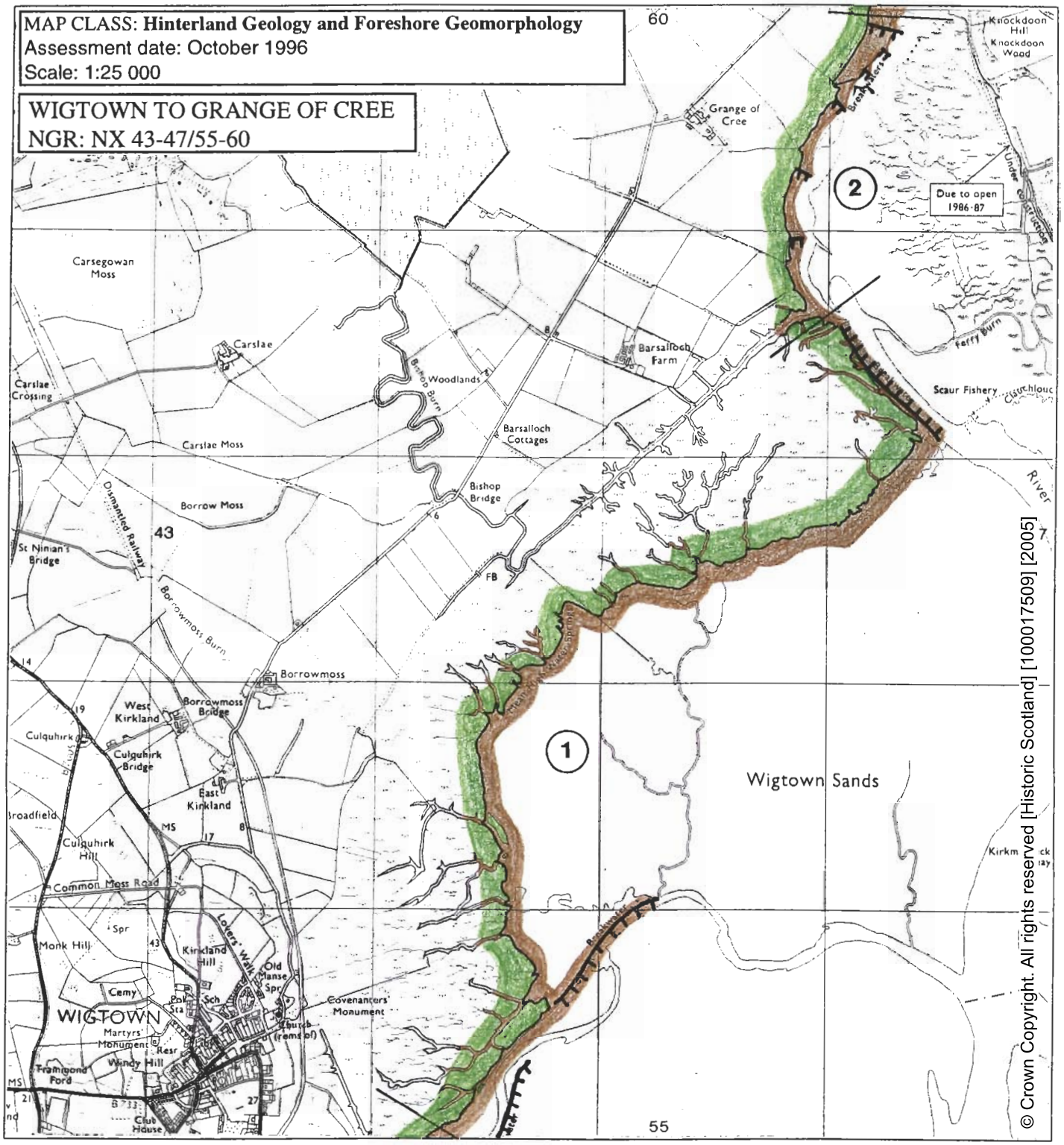
1. East of WIGTOWN CASTLE to east of BARSALOCH FARM
NX 464 560
5km
Low edge (< 5m)
Estuarine saltmarsh and tidal mudflats
dissected by a network of drainage channels. The foreshore is exclusively estuarine mud.

2. East of BARSALOCH FARM to north of GRANGE of CREE
NX 460 598
1.5km
Low edge (< 5m)
Saltmarsh flats and estuarine mud
Saltmarsh on low river-edge with deep river channel. Low tidal flats intermixed with fine grained sand and mud.

MAP CLASS: **Hinterland Geology and Foreshore Geomorphology**
Assessment date: October 1996
Scale: 1:25 000

WIGTOWN TO GRANGE OF CREE
NGR: NX 43-47/55-60



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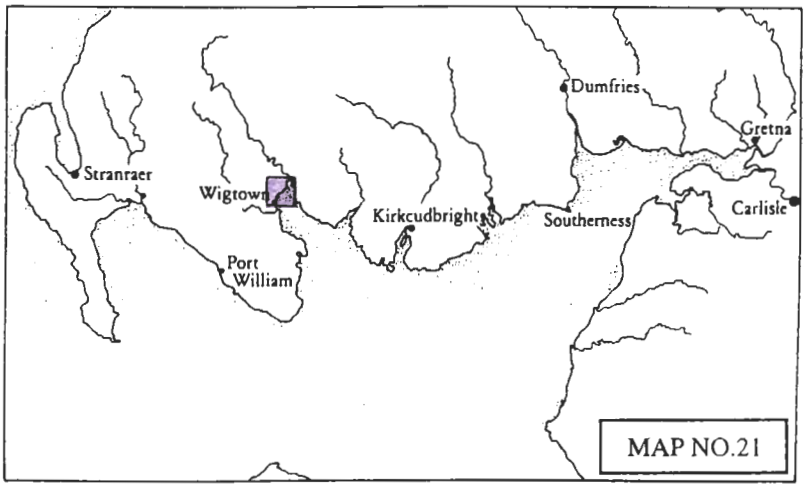
KEY

Hinterland Geology	Derwent Code	Colour
Drift, boulder clay	French Grey	
Drift, boulder clay over visible rock	Dark Violet	
Raised beach and marine deposits	Golden Brown	
Blown sand	Pink Madder Lake	
Glacial sand and gravel	Magenta	
Alluvium	Emerald Green	
Coastal Geomorphology		
Mainly rock platform	Deep vermilion	
Mainly sand	Ultramarine	
Mainly alluvial/marine mud	Venetian Red	
Marsh	May Green	
Coast Edge		
Low edge (<5m)	Thin black line	
Cliff (>5m)	Solid black line	
Man made barrier	Black line with spines	
Shingle beach	Small circles	ooooooo
Human disturbance	Black carats	^^^^^^^



MAP 21: EROSION

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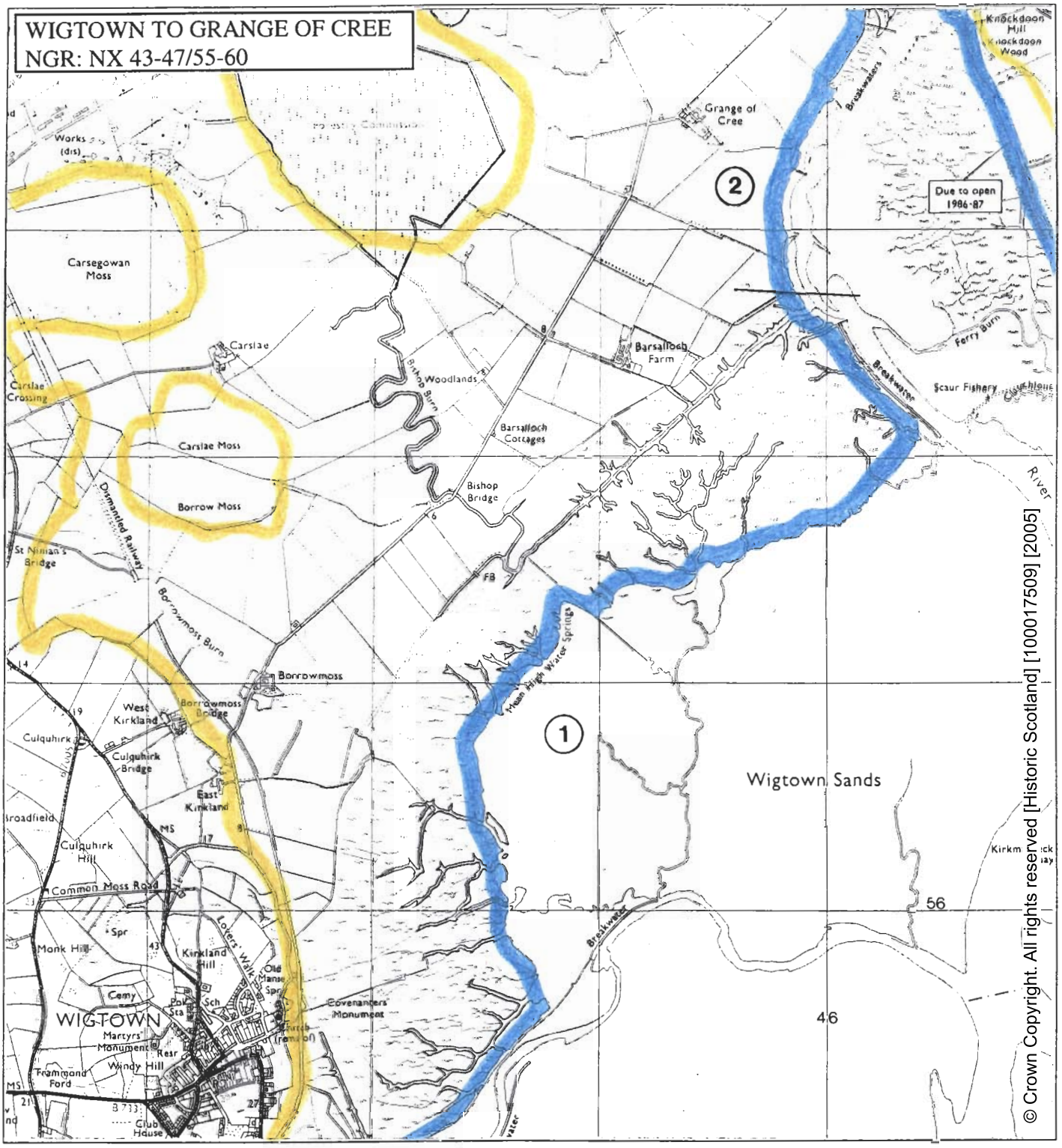
1. North of WIGTOWN HARBOUR to north-west of BARSALLOCH FARM
NX 453 575
6.6km
Accreting or stable
This unit is a saltmarsh formed by the formation of alluvium on the east side of the River Cree estuary. This wide stretch of marsh is deeply incised by drainage channels. In places arcuate slope failure is occurring on the edge of some of the channels. Due to the high sediment loading the general trend for this region is accretion.

2. West of GRANGE of CREE to east of POLWILLY
2.3km
Accreting or stable
The narrow lower tidal reach of the River Cree. This unit consists of eroding soft mud banks with accreting mud on the edge of breakwaters. Stands of *Phragmites sp* are established which are excellent at trapping silts leading to increased sediment build up.

WIGTOWN TO GRANGE OF CREE
NGR: NX 43-47/55-60



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KEY

Erosion class	Derwent Code	Colour
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No access	Blank	
Land below 10m	Straw Yellow	

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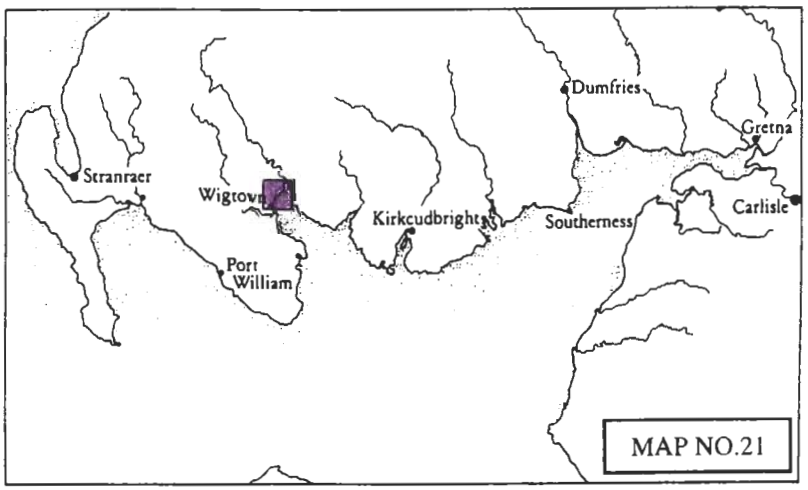


MAP 21: BUILT HERITAGE AND ARCHAEOLOGY

Sites on the Coast Edge & Foreshore

NX 4520 5708
WIGTOWN SANDS
Fishing Nets
20th century
Good
Nil

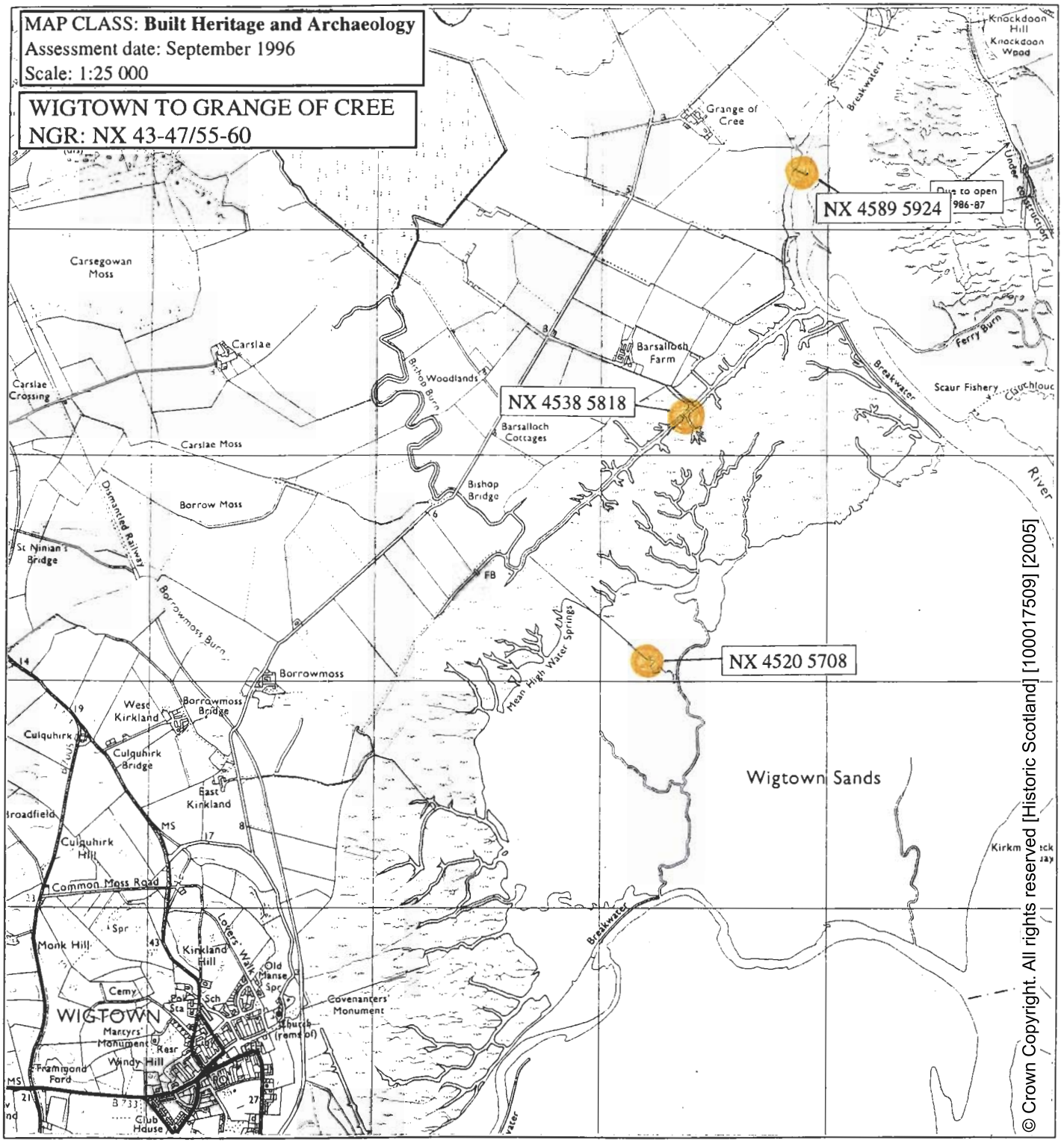
NX 4589 5924
BARSALLOCH FARM
Breakwater
Uncertain
Poor
Monitor

Sites in the Hinterland

NX 4538 5818
BARSALLOCH FARM
Old Bridge
Uncertain
Good
Nil

MAP CLASS: **Built Heritage and Archaeology**
Assessment date: September 1996
Scale: 1:25 000

WIGTOWN TO GRANGE OF CREE
NGR: NX 43-47/55-60



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KEY

Site location	Symbol	Colour	Significance
NGR ref. - eg. NX 143 368	Roundel - Solid, (or area)	Red	Protected Ancient Monument
	Cross	Red	Listed Historic Building
	Roundel - Open, (or area)	Red	Monument formally proposed by Historic Scotland for designation
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	Roundel - Solid, (or area)	Yellow	Undesignated wreck
	Area	Green	Insufficient information; more work needed
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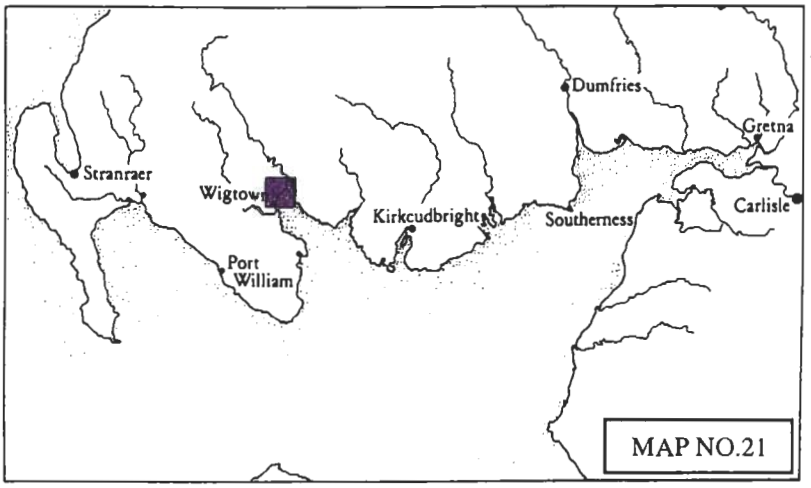

MAP 22: SPITTAL WOOD TO CARSE OF BARR

Hinterland Geology and Coastal Geomorphology: This area comprises the lower tidal reach of the River Cree. The hinterland geomorphology consists of salt- marsh. This skirts the river channel that meanders in a series of loops, straights and tight curves. Alluvial silts are present along the river banks. Flood banks protect the low lying land behind which is below 5m O.D.

Erosion Class: Tidal river channels are very dynamic environments (Bearman 1989). On the quiet stretches of the river, where the current is not as strong, stands of common reed (*Phragmites sp*) are trapping silts and mud. On the inside of the channel loops erosion of the bank-edge is common. At high tide the main channel is submerged and flowing which over time results in channel edge erosion or under-cutting leading to channel shifts. It is considered that this region is best classified as both accreting and eroding..

Built Heritage & Archaeology: This section contains a scattered distribution of relatively modern (late nineteenth and twentieth century) sites, comprising flood banks, breakwaters and the remains of a disused railway bridge. Only in the case of the railway bridge is monitoring required.

Map 22: Hinterland Geology and Coastal Geomorphology

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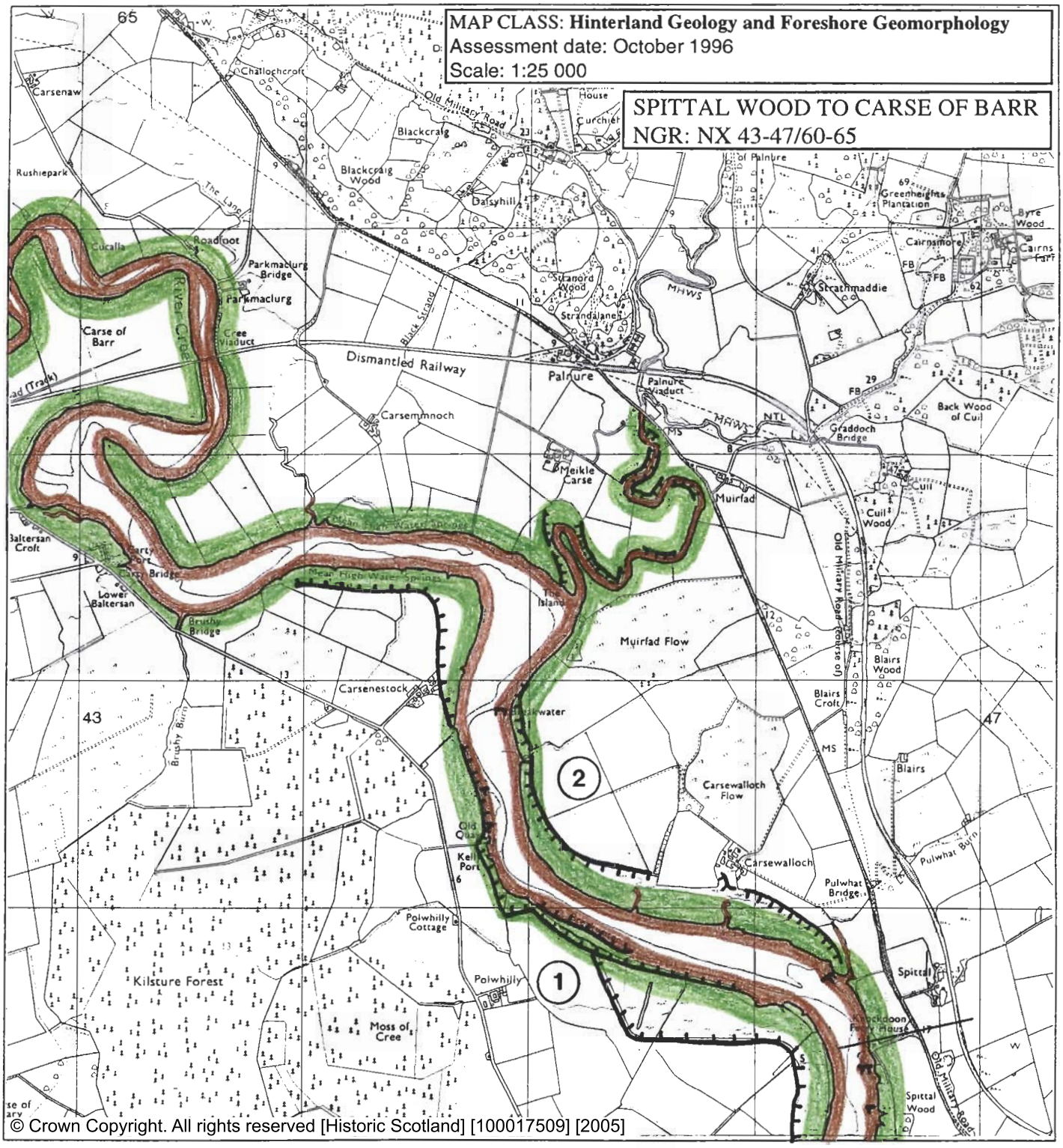
1. North of GRANGE of CREE to NEWTON STEWART
NX 450 610
10km
Low edge (< 5m)
Saltmarsh and alluvium
Salt-marsh alongside the meandering River Cree. The river channel has a margin of fine grained alluvium.

2. NEWTON STEWART to KNOCKDOWN FERRY HOUSE
NX 450 625
10km
low edge (< 5m)
Salt-marsh and alluvium
Salt-marsh formed on alluvium bordering a tidal river channel. Fine grained muds occur on the margin of the river channel.

MAP CLASS: **Hinterland Geology and Foreshore Geomorphology**
Assessment date: October 1996
Scale: 1:25 000

SPITTAL WOOD TO CARSE OF BARR
NGR: NX 43-47/60-65



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KEY

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Raised beach and marine deposits	Golden Brown	
Blown sand	Pink Madder Lake	
Glacial sand and gravel	Magenta	
Alluvium	Emerald Green	
Coastal Geomorphology		
Mainly rock platform	Deep vermilion	
Mainly sand	Ultramarine	
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Marsh	May Green	
Coast Edge		
Low edge (<5m)	Thin black line	
Cliff (>5m)	Solid black line	
Man made barrier	Black line with spines	
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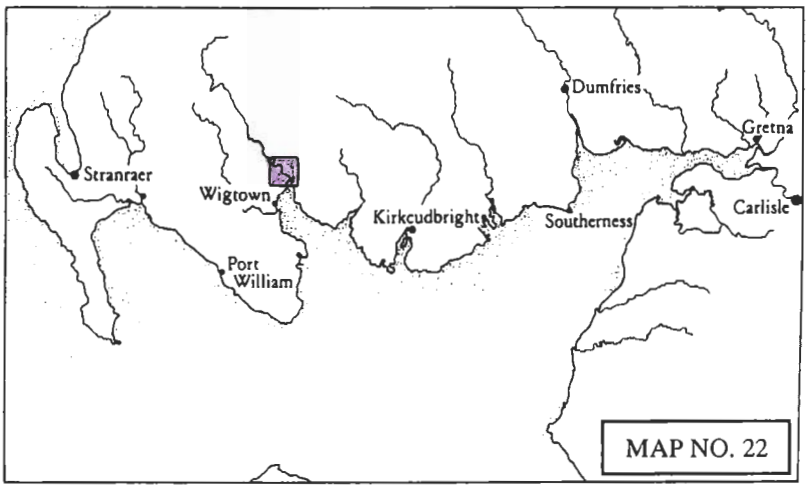
Human disturbance	Black carats	^^^^^^



MAP 22: EROSION

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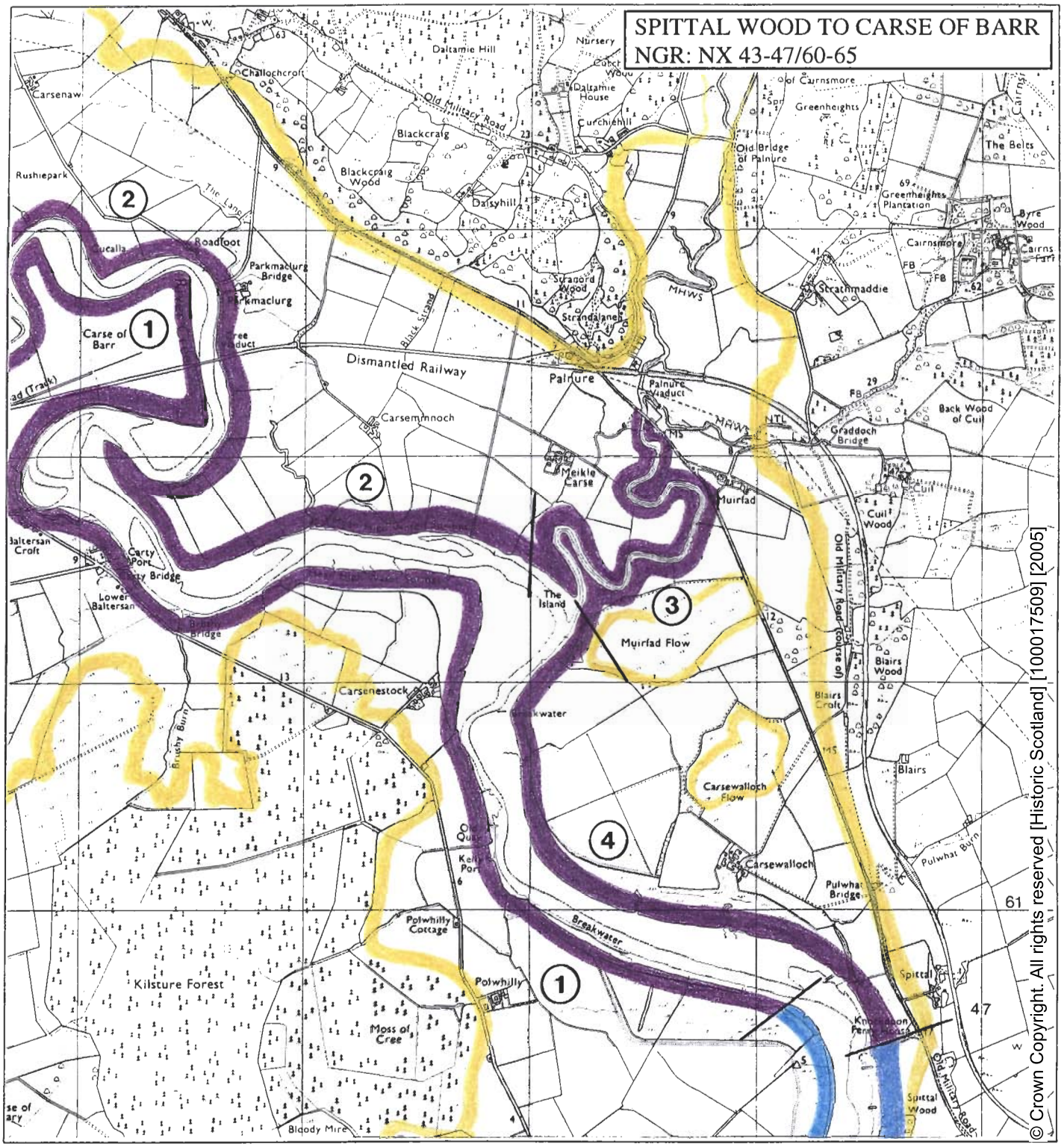
1. East of POLWHILLY to the A75T bridge at NEWTON STEWART
NX 434 623
Both accreting and eroding
The tidal reach of the River Cree. This unit meanders in a series of extensive loops of which the inner curves exhibit mud accretion. The outside of the curves display erosion at the current MHWS mark. The hinterland is low lying but protected in parts by earthwork flood defences.

2. A75T bridge at NEWTON STEWART to south of MEIKLE CARSE
NX 437 631
8.5km
Both accreting and eroding
East side of the lower tidal reach of the River Cree. Both accretion and erosion is occurring as in that described in the previous unit.

3. The tidal reach of the PALNURE BURN
NX 456 625
2.2km
Both accreting and eroding
This short tidal stretch of the Palnure Burn meanders north-eastwards through a flood plain

4. Mouth of the PALNURE BURN to KNOCKDOON FERRY HOUSE
NX 435 613
3km
Both accreting and eroding
A curving stretch of the lower tidal River Cree. Parts of the bank display slope failure at the SHWM. As the main river channel is on the western side mud is now accreting on the eastern side of the channel.



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MAP CLASS: **EROSION**
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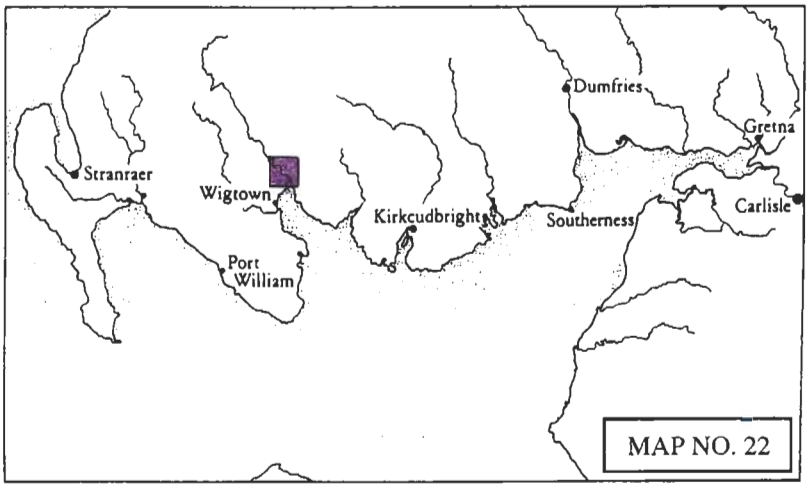


MAP 22: BUILT HERITAGE AND ARCHAEOLOGY

Sites on the Coast Edge & Foreshore

NX 4360 6342
PARKMACLURG
Disused Railway Bridge
19/20th century
Poor
Monitor

NX 4508 6136
CARSEWALLOCH FARM
Flood Bank
Mid 20th century
Good
Nil

NX 4652 6034
KNOCKDOON
Flood Bank
Uncertain
Fair
Nil

NX 4650 6028
RIVER CREE
Breakwater
Uncertain
Fair
Nil

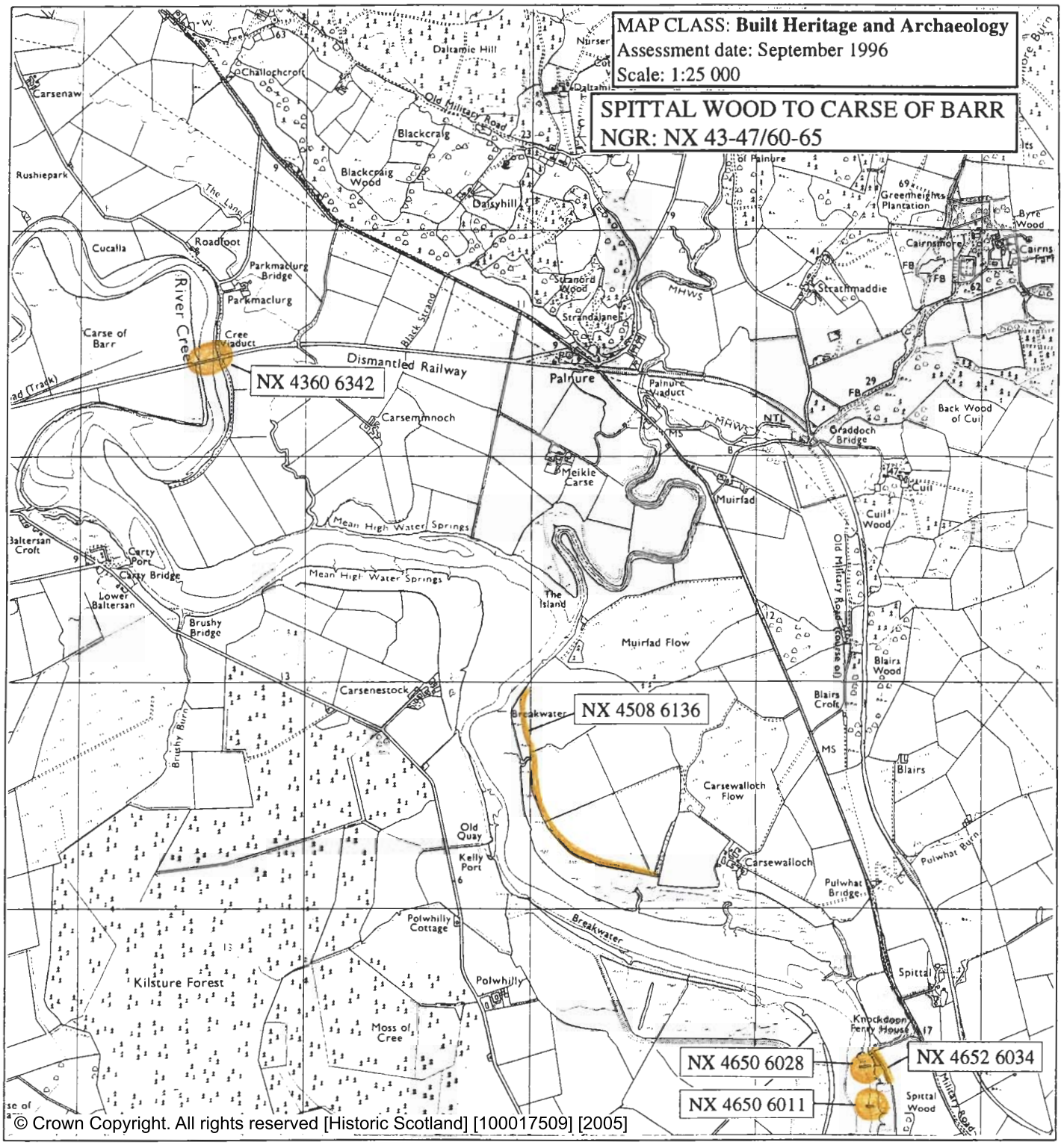
NX 4650 6011
KNOCKDOON
Breakwater
Uncertain
Fair
Nil

Sites in the Hinterland

None

MAP CLASS: **Built Heritage and Archaeology**
Assessment date: September 1996
Scale: 1:25 000

SPITTAL WOOD TO CARSE OF BARR
NGR: NX 43-47/60-65



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	Cross	Red	Listed Historic Building
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NMRS ref. - eg. NX13 SW17	Roundel - Solid, (or area)	Yellow	Other known Ancient Monument
	Dashed outline	Yellow	Gardens/Designed landscape
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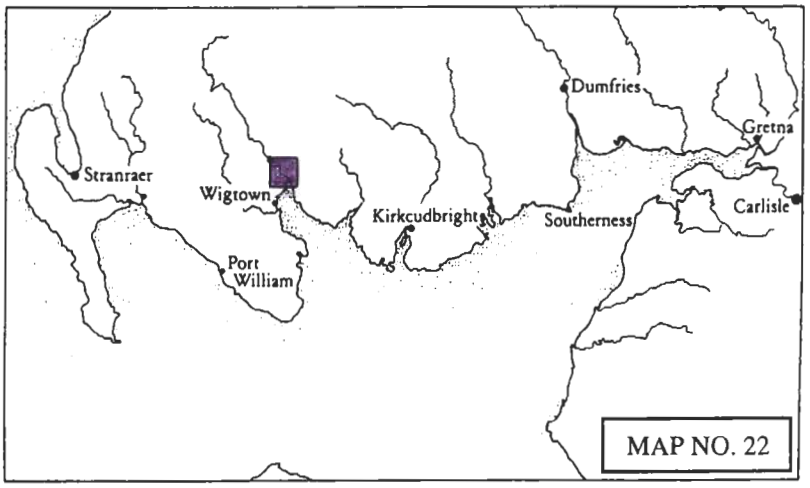


MAP 23: CARSENESTOCK TO NEWTON STEWART

Hinterland Geology and Coastal Geomorphology: The upper tidal reach of the River Cree flows through a flat featureless region of salt-marsh that lies below 5m O.D. The river channel meanders forming a series of large loops and becomes straighter below Newton Stewart. Flood banks protect the so called Loop of Carsenaw which has been reclaimed for pasture. The banks of the river are covered with alluvial silts.

Erosion Class: The same conditions apply to this section of the river as that described for the lower section of the River Cree.

Built Heritage & Archaeology: This section contains only one site, Machermore Castle, originally dating to the seventeenth or eighteenth centuries. It is located inland from the river Cree and is under no threat.

Map 23: Hinterland Geology and Coastal Geomorphology

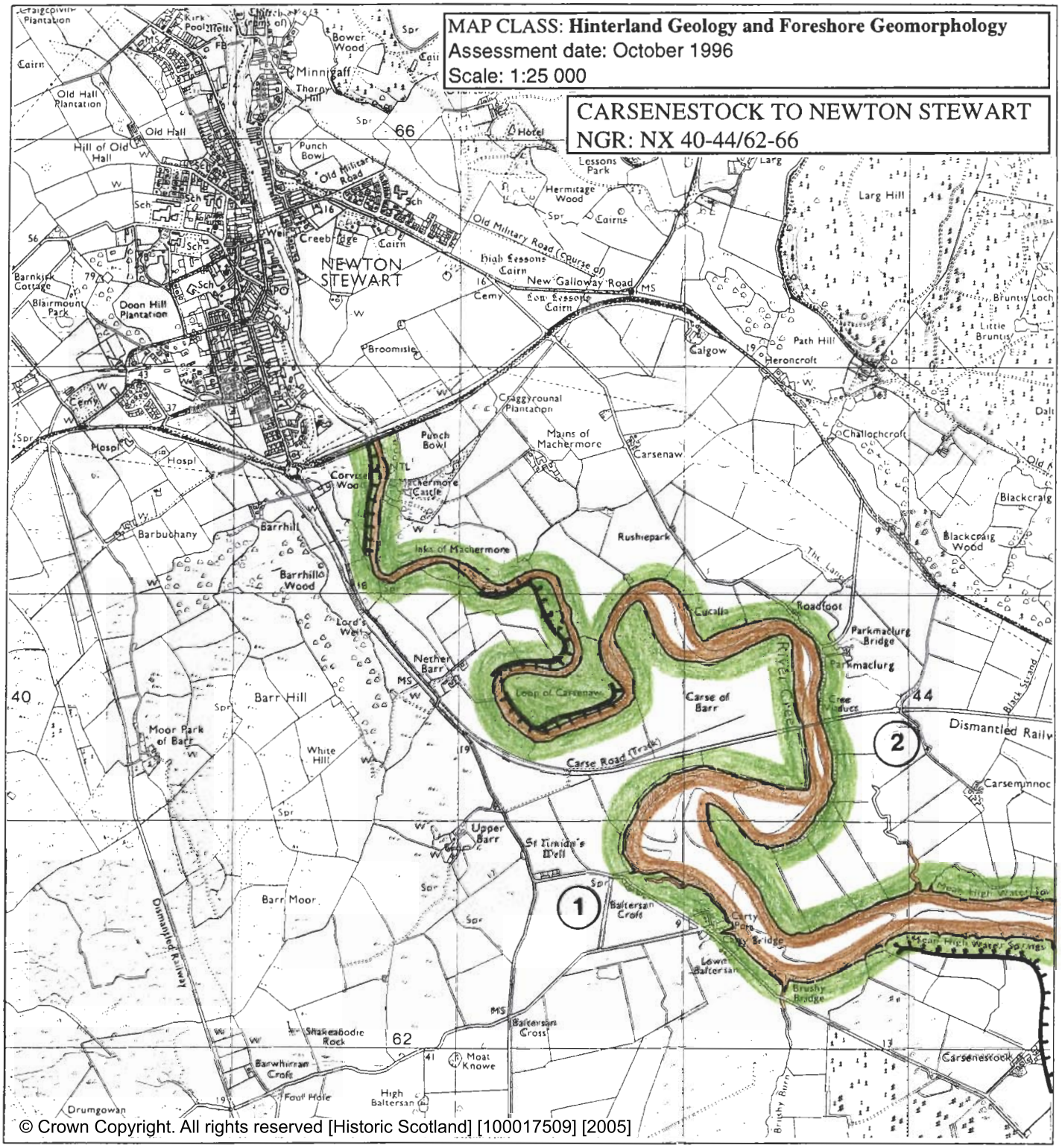
---

1. North of GRANGE of CREE to NEWTON STEWART
NX 450 610
10km
Low edge (< 5m)
Saltmarsh and alluvium
Salt-marsh alongside the meandering River Cree. The river channel has a margin of fine grained alluvium colonised by salt-marsh communities.

2. NEWTON STEWART to KNOCKDOWN FERRY HOUSE
NX 450 625
10km
low edge (< 5m)
Salt-marsh and alluvium
Salt-marsh formed on alluvium bordering a tidal river channel. Fine grained muds occur on the margin of the river channel.

MAP CLASS: **Hinterland Geology and Foreshore Geomorphology**
Assessment date: October 1996
Scale: 1:25 000

CARSENESTOCK TO NEWTON STEWART
NGR: NX 40-44/62-66



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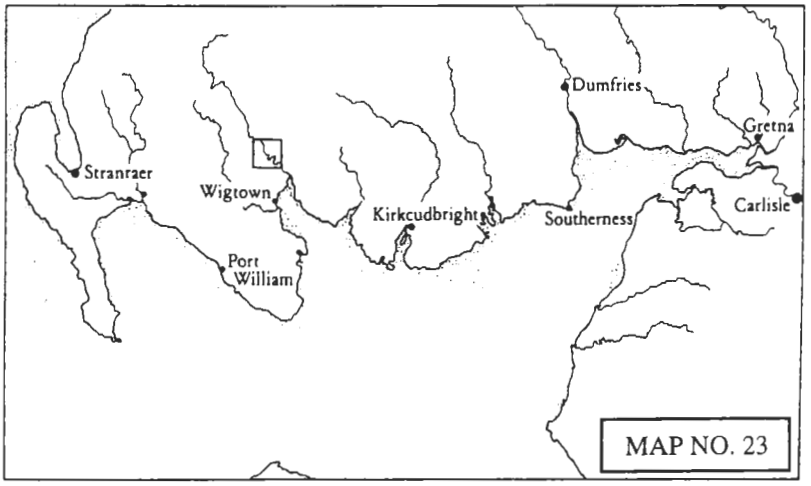
KEY

Hinterland Geology	Derwent Code	Colour
Drift, boulder clay	French Grey	
Drift, boulder clay over visible rock	Dark Violet	
Raised beach and marine deposits	Golden Brown	
Blown sand	Pink Madder Lake	
Glacial sand and gravel	Magenta	
Alluvium	Emerald Green	
Coastal Geomorphology		
Mainly rock platform	Deep vermilion	
Mainly sand	Ultramarine	
Mainly alluvial/marine mud	Venetian Red	
Marsh	May Green	
Coast Edge		
Low edge (<5m)	Thin black line	
Cliff (>5m)	Solid black line	
Man made barrier	Black line with spines	
Shingle beach	Small circles	000000
Human disturbance	Black carats	^^^^^^



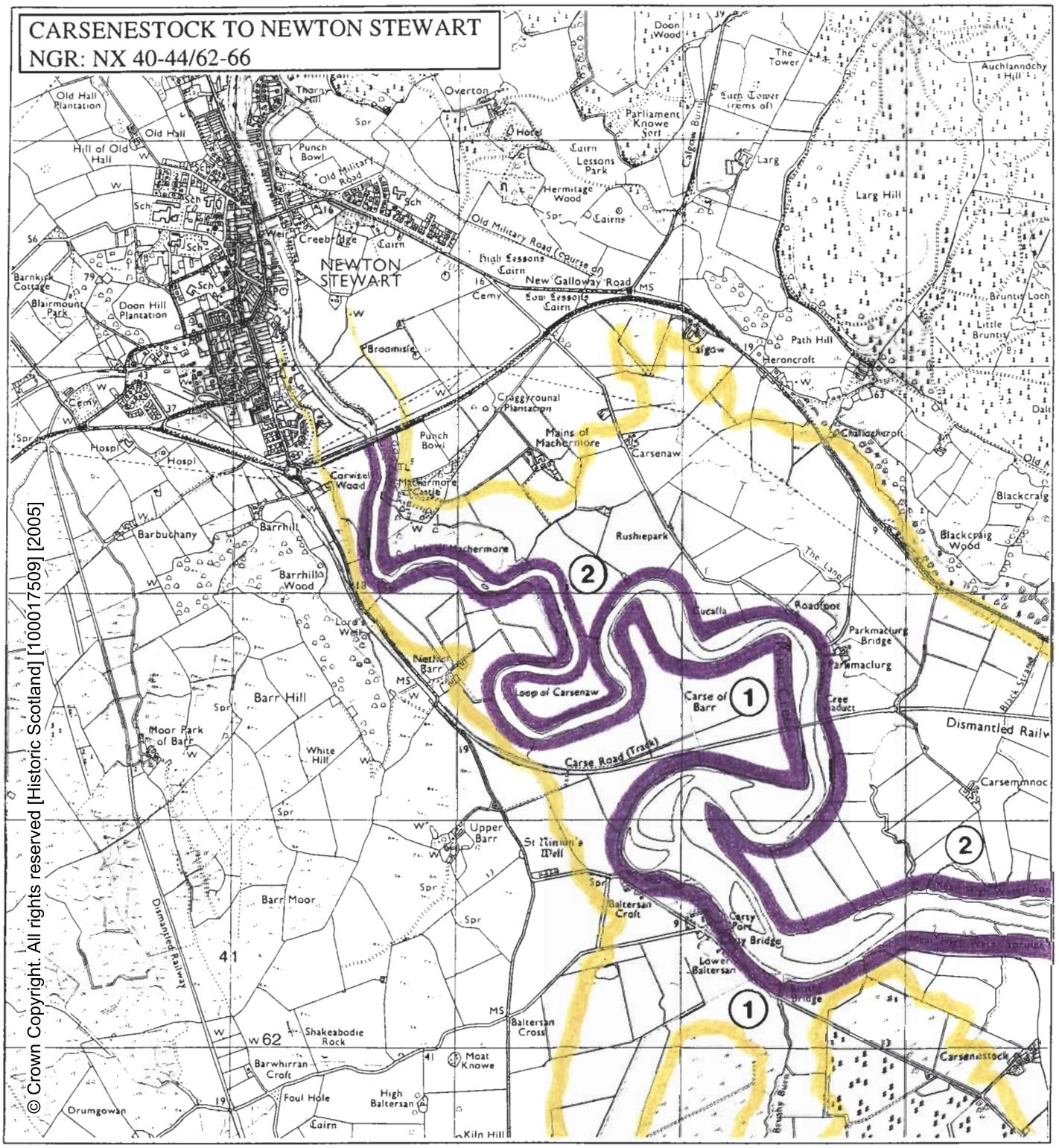
MAP 23: EROSION

---

1. East of POLWHILLY to the A75T bridge at NEWTON STEWART
NX 434 623
Both accreting and eroding
The tidal reach of the River Cree. This unit meanders in a series of extensive loops of which the inner curves exhibit mud accretion. The outside of the curves display erosion at the current MHWS mark. The hinterland is low lying but protected in parts by earthwork flood defences.

2. A75T bridge at NEWTON STEWART to south of MEIKLE CARSE
NX 437 631
8.5km
Both accreting and eroding
East side of the lower tidal reach of the River Cree. Both accretion and erosion is occurring as in that described in the previous unit.

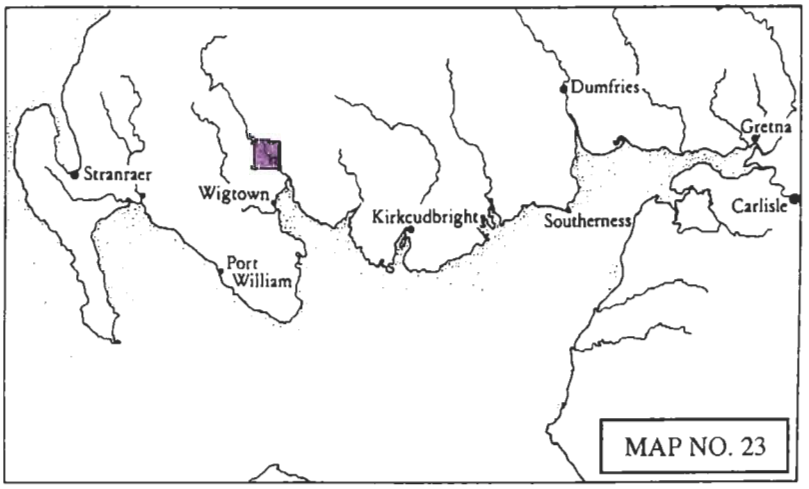
CARSENESTOCK TO NEWTON STEWART
NGR: NX 40-44/62-66



KEY

Erosion class	Derwent Code	Colour
Definitely accreting	Prussian Blue	
Accreting/stable	Light Blue	
Stable	Grass Green	
Stable/eroding	Deep Chrome	
Definitely eroding	Deep Vermilion	
Both accreting and eroding	Imperial Purple	
No access	Blank	
Land below 10m	Straw Yellow	

MAP CLASS: **EROSION**
Assessment date: 02.10.96
Scale 1:25 000



MAP 23: BUILT HERITAGE AND ARCHAEOLOGY

Sites on the Coast Edge & Foreshore	Sites in the Hinterland
None	**NX 4175 6445** MACHERMORE CASTLE Castle 17/18th century Good Nil

MAP CLASS: **Built Heritage and Archaeology**
Assessment date: September 1996
Scale: 1:25 000

CARSENESTOCK TO NEWTON STEWART
NGR: NX 40-44/62-66

NX 4175 6445

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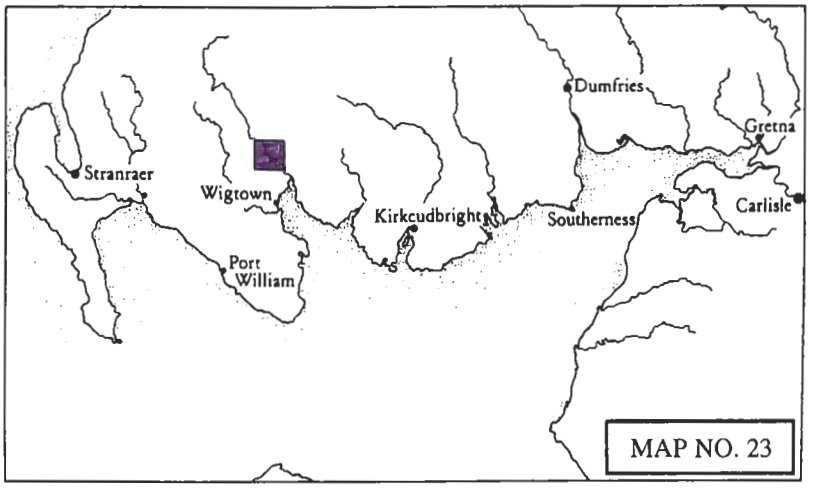
KEY

Site location	Symbol	Colour	Significance
NGR ref. - eg. NX 143 368	Roundel - Solid, (or area)	Red	Protected Ancient Monument
	Cross	Red	Listed Historic Building
	Roundel - Open, (or area)	Red	Monument formally proposed by Historic Scotland for designation
	Roundel - Solid, (or area)	Yellow	Other known Ancient Monument
NMRS ref. - eg. NX13 SW17	Dashed outline	Yellow	Gardens/Designed landscape
	Roundel - Solid, (or area)	Yellow	Undesignated wreck
	Area	Green	Insufficient information; more work needed
	Area	Blue	Probably archaeologically sterile



MAP NO. 23

MAP 24: KNOCKDOON HILL TO KIRKBRIDE BANK

Hinterland Geology and Coastal Geomorphology: This region comprises the mouth of the River Cree south to Kirkbride Bank. The hinterland geology is dominated by alluvium to the south of Creetown. Further south this geology changes to marine sand and gravel. The shoreline at the mouth of the Cree contains a wide expanse of salt-marsh. Alluvial mud intermixed with sand occurs in the region of Carskeel Point (NX 474565). Extensive quantities of quarry stone have been dumped to create the pier at Kirkmabreck Quarry Quay. South of the quay, the foreshore is mainly sand and shingle.

Erosion Class: The coastal edge around Creetown is accreting or stable. Southwards towards Kirkmabreck Quarry the coastline is both accreting and eroding. Channel edge erosion is occurring as the river channel moves closer to the shore. As a result of this, silt is accreting in the lee of the quarry pier. Southward from this feature the foreshore is extremely wide and contains an admixture of silt, sand and shingle. The shoreline is colonised by reed-beds which shows that conditions here are stable.

Built Heritage & Archaeology: A scattered distribution of fishing and sea related sites south of Creetown comprise the main group of sites in this section. Included in this group are component features of two Fisheries: fishing nets, fishing stations and the fisheries themselves. Adjacent to the fisheries lie Creetown Old Quay and Kirkmabreck Quarry and Quay. For all the sites located in this section monitoring of the limited sea abrasion taking place is recommended. Further inland, north of Creetown, are the former stables of Wickham Place. These have been altered into a house and are not threatened.

Map 24: Hinterland Geology and Coastal Geomorphology

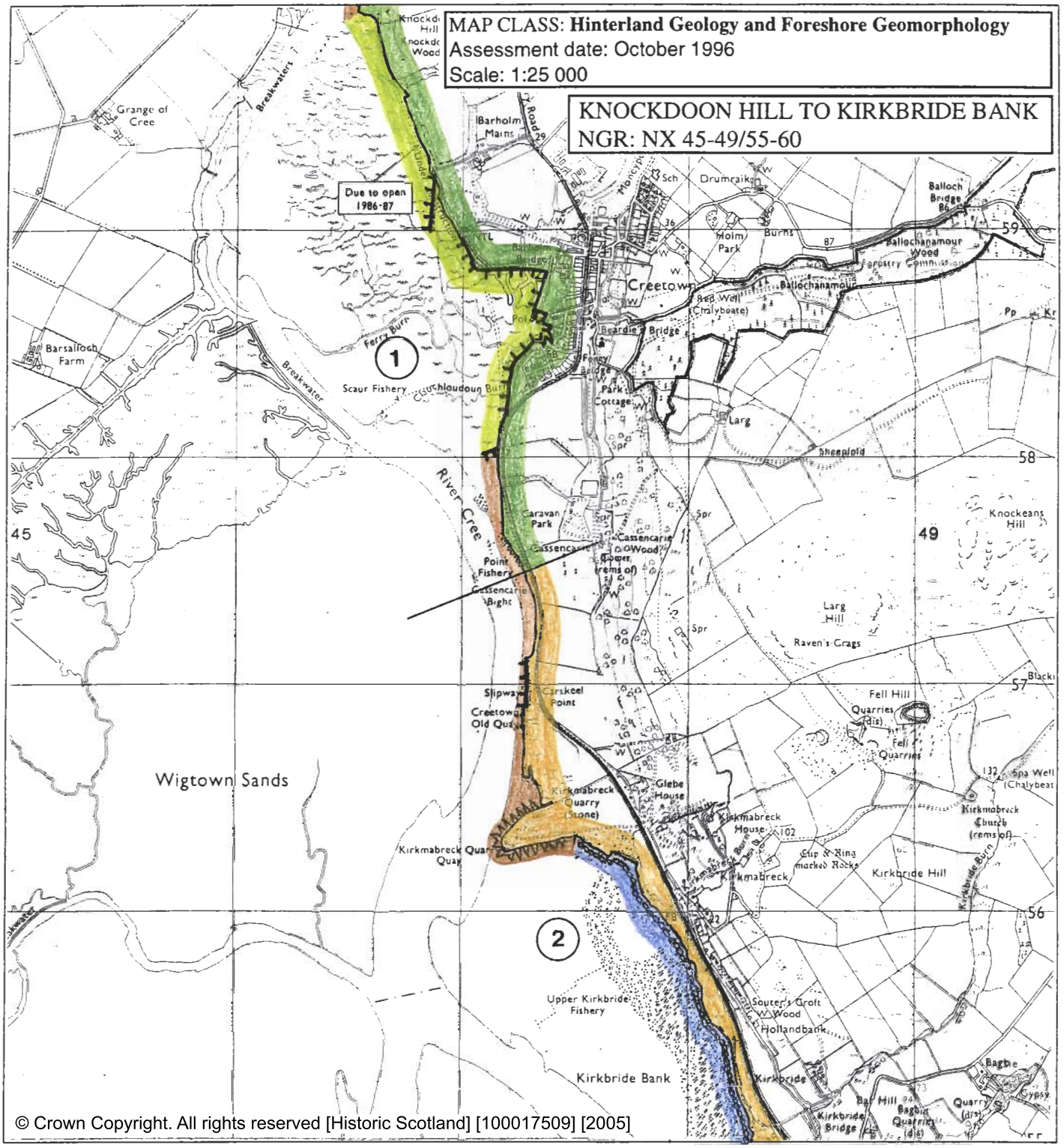
---

1. KNOCKDOWN FERRY HOUSE south to POINT FISHERY (west of Cassencarie)
NX 470 590
3.2km
Low edge (<10m)
Alluvium and salt-marsh
Upper tidal reach of the Cree River. The hinterland consists of alluvial deposits on the edge of Cree basin. Salt-marsh occurs the length of this unit and is dissected by numerous drainage channels.

2. POINT FISHERY to CARSLUITH GARDENS
NX 480 560
4.2km
Low edge (< 10m)
Marine derived sands and gravels
Middle tidal reach of Wigton Sands with marine sands and gravels on the hinterland. The foreshore consists of alluvial silts towards Point Fishery that gives way to salt-marsh further south. South of Kirkmabreck Quay the foreshore changes markedly to poorly sorted boulders intermixed with fine alluvial sand and mud.

MAP CLASS: **Hinterland Geology and Foreshore Geomorphology**
Assessment date: October 1996
Scale: 1:25 000

KNOCKDOON HILL TO KIRKBRIDE BANK
NGR: NX 45-49/55-60



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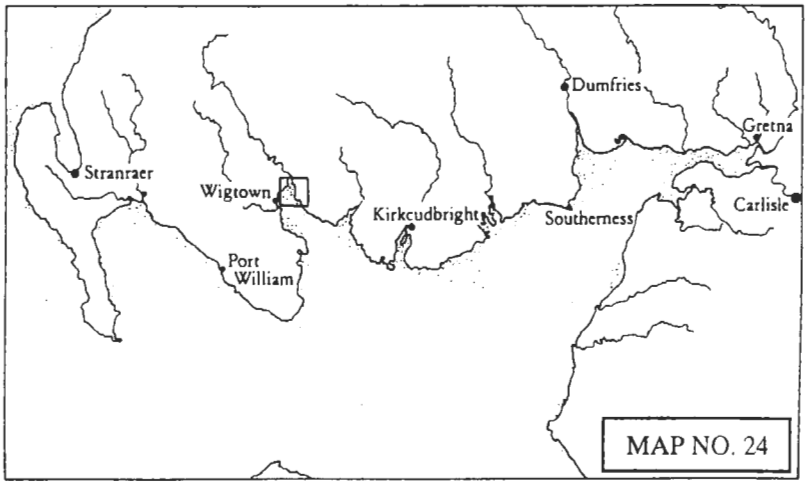
KEY

Hinterland Geology	Derwent Code	Colour
Drift, boulder clay	French Grey	
Drift, boulder clay over visible rock	Dark Violet	
Raised beach and marine deposits	Golden Brown	
Blown sand	Pink Madder Lake	
Glacial sand and gravel	Magenta	
Alluvium	Emerald Green	
Coastal Geomorphology		
Mainly rock platform	Deep vermilion	
Mainly sand	Ultramarine	
Mainly alluvial/marine mud	Venetian Red	
Marsh	May Green	
Coast Edge		
Low edge (<5m)	Thin black line	
Cliff (>5m)	Solid black line	
Man made barrier	Black line with spines	
Shingle beach	Small circles	oooooo
Human disturbance	Black carats	^^^^^^^



MAP 24: EROSION

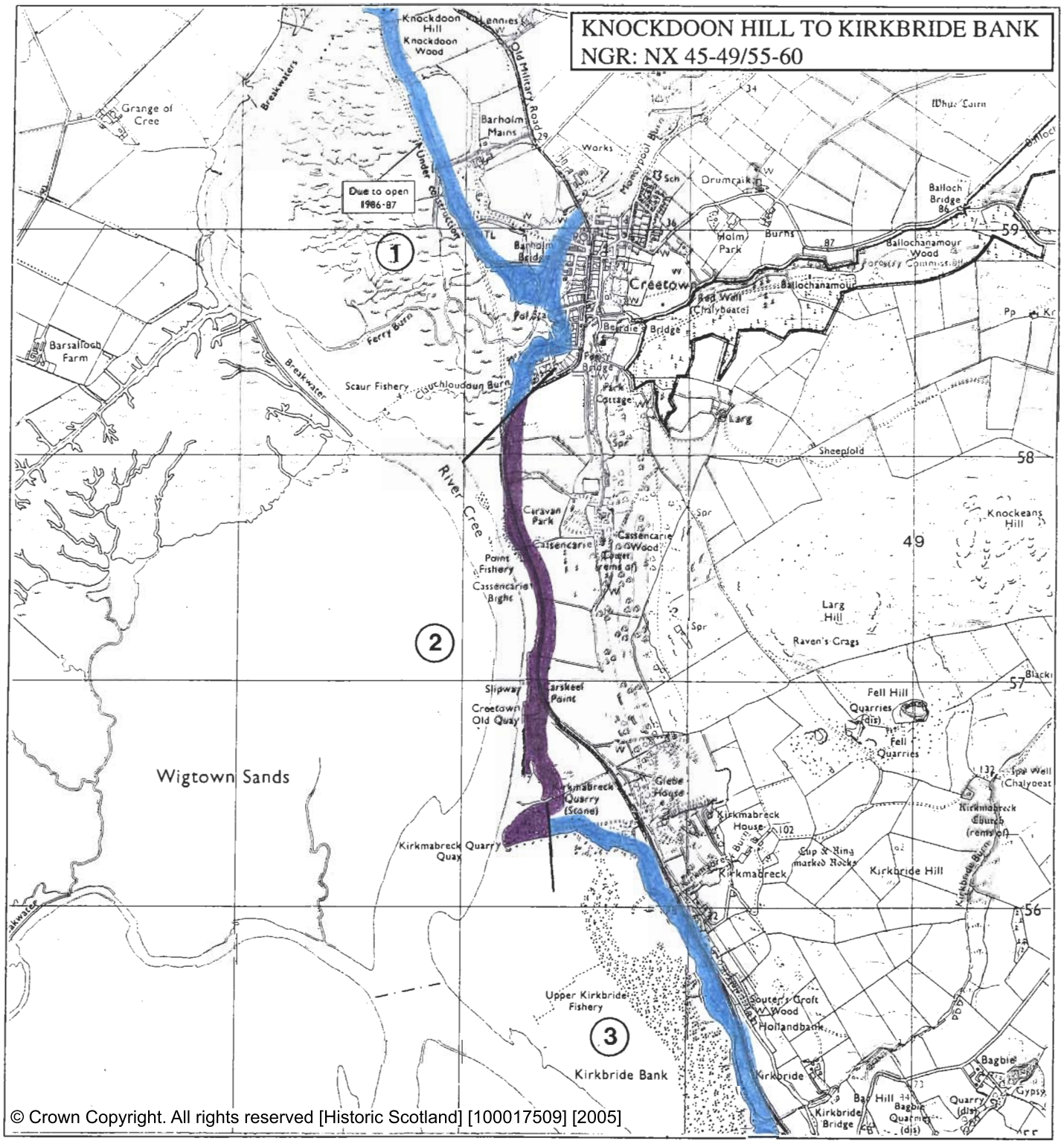
---

1. KNOCKDOON FERRY HOUSE to CREETOWN
NX 470 590
2.4km
Accreting or stable
Salt marsh and mud flats that are exposed at low tides. The marsh edge appears at present to be stable.

2. CREETOWN to KIRKMABRECK QUARRY
NX 473 570
2km
Eroding or stable
This unit consists of a regular coastal edge of salt marsh that is being eroded in places. Quarry rubble has been used to create a wharf at Carskeel Point and is stabilising this part of the coastline.

3. KIRKMABRECK QUARRY to LOWER KIRKBRIDE FISHERY
NX 482 555
1.5km
Accreting or Stable
The MHWM is consolidated by reed beds. Shingle and mud is accumulating in parts possibly due to long shore drift caused by the large quarry dumps at Kirkmabreck.

KNOCKDOON HILL TO KIRKBRIDE BANK
NGR: NX 45-49/55-60



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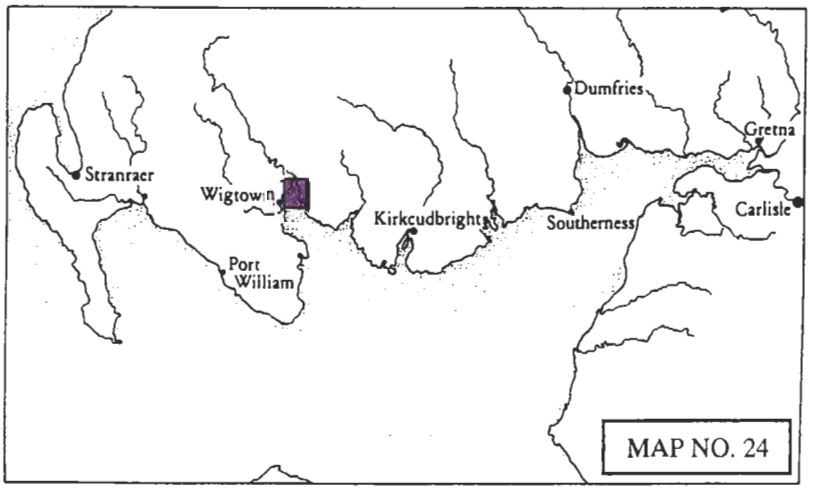
KEY

Erosion class	Derwent Code	Colour
Definitely accreting	Prussian Blue	
Accreting/stable	Light Blue	
Stable	Grass Green	
Stable/eroding	Deep Chrome	
Definitely eroding	Deep Vermilion	
Both accreting and eroding	Imperial Purple	
No access	Blank	
Land below 10m	Straw Yellow	

MAP CLASS: **EROSION**
Assessment date: 02.10.96
Scale 1:25 000



MAP 24: BUILT HERITAGE AND ARCHAEOLOGY

Sites on the Coast Edge & Foreshore

NX 4714 5760
POINT FISHERY, CASSENCARIE
Fishing Nets & Stakes
19/20th century
Fair
Monitor

NX 4727 5683
CREETOWN OLD QUAY
Slipway & Quay
Uncertain
Fair
Monitor

NX 4717 5628
KIRKMABRECK QUARRY
Quarry & Quay
Uncertain
Fair
Monitor

NX 4778 5590
UPPER KIRKBRIDE
Fishing Station
Uncertain
Fair
Survey & Monitor

NX 4769 5582
UPPER KIRKBRIDE
Fishing Station
Uncertain
Fair
Survey & Monitor

NX 4760 5572
UPPER KIRKBRIDE FISHERY
Fishing Nets & Stakes
Uncertain
Fair
Monitor

Sites in the Hinterland

NX 4704 5932
WICKHAM PLACE
Former Stables
Statutory Listed Building
Early 19th century
Good
Nil

MAP CLASS: **Built Heritage and Archaeology**
Assessment date: September 1996
Scale: 1:25 000

KNOCKDOON HILL TO KIRKBRIDE BANK
NGR: NX 45-49/55-60

NX 4704 5932
Due to open 1986-87
NX 4714 5760
NX 4727 5683
NX 4717 5628
NX 4778 5590
NX 4769 5582
NX 4760 5572

Knockdoon Hill
Knockdoon Wood
Grange of Cree
Barholm Mains
Old Military Road
Under Construction
Breakwaters
Barsalloch Farm
Ferry Burn
Breakwater
Scaur Fishery
Cuchloudoun Burn
Barholm Bridge
Creetown
Drumcaik
Holm Park
Ballochanamour
Ballochanamour Wood
Forestry Commission
Balloch Bridge
Bed Well (Chalybeate)
Beardie Bridge
Ferry Bridge
Park Cottage
Larg
Sheepfold
River Cree
Caravan Park
Cassencarie
Cassencarie Wood
Point Fishery
Cassencarie Bight
Knockeans Hill
Larg Hill
Raven's Crags
Slipway
Carskeel Point
Creetown Old Quay
Fell Hill
Quarries (dis)
Fell Quarries
Wigtown Sands
Kirkmabreck Quarry (Stone)
Glebe House
Kirkmabreck House
Kirkmabreck Quay
Kirkmabreck
Cup & Ring marked Rocks
Kirkbride Hill
Kirkmabreck Church (rems of)
Spa Well (Chalybeate)
Upper Kirkbride Fishery
Souter's Croft Wood
Hollandbank
Kirkbride Bank
Kirkbride
Kirkbride Bridge
Bagbie
Bagbie Quarries (dis)
Quarry (dis)

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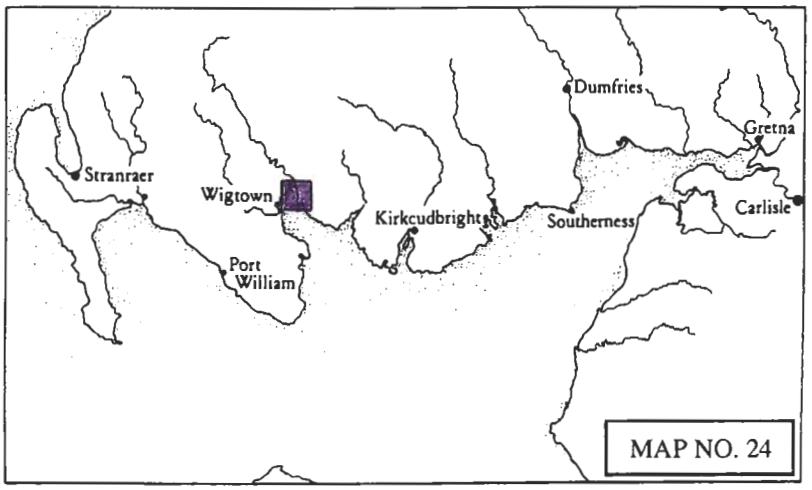
KEY

Site location	Symbol	Colour	Significance
NGR ref. - eg. NX 143 368	Roundel - Solid, (or area)	Red	Protected Ancient Monument
	Cross	Red	Listed Historic Building
	Roundel - Open, (or area)	Red	Monument formally proposed by Historic Scotland for designation
	Roundel - Solid, (or area)	Yellow	Other known Ancient Monument
NMRS ref. - eg. NX13 SW17	Dashed outline	Yellow	Gardens/Designed landscape
	Roundel - Solid, (or area)	Yellow	Undesignated wreck
	Area	Green	Insufficient information; more work needed
	Area	Blue	Probably archaeologically sterile



MAP 25: KIRKBRIDE BANK TO KIRKDALE BANK

Hinterland Geology and Coastal Geomorphology: This stretch of coastline is regular with a hinterland dominated by marine sand and gravel deposits. The foreshore overlooks a wide expanse of tidal flats and is covered with poorly sorted boulders, shingle and sand.

Erosion Class: Owing to the shallow conditions and long fetch across Wigtown Bay, wave action is dampened thus resulting in stable conditions along this particular stretch of the coast.

Built Heritage & Archaeology: This section includes two sets of fishing stakes, forming Lower Kirkbride Fishery and a quay; Kirkdale Port. All three sites are situated on the coastal edge. However only the more northern fishing stakes of Lower Kirkbride Fishery is susceptible to sea abrasion and thus requiring monitoring.

Map 25: Hinterland Geology and Coastal Geomorphology

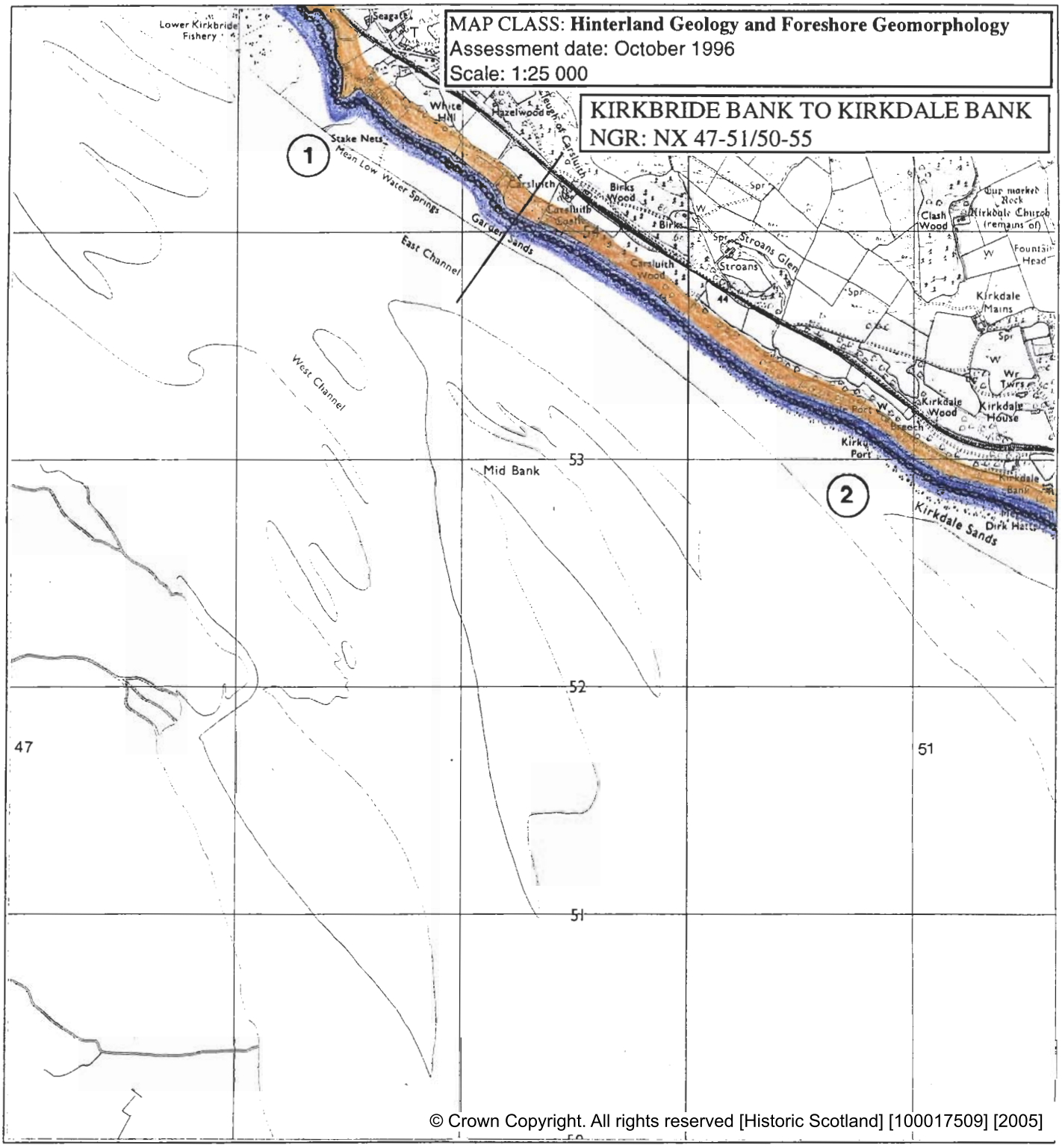
---

1. POINT FISHERY to CARSLUITH GARDEN SANDS
NX 480 560
4.2km
Low edge (< 10m)
Marine derived sands and gravels
Middle tidal reach of Wigton Sands with marine sands and gravels on the hinterland. The foreshore consists of alluvial silts towards Point Fishery that gives way to salt-marsh further south. South of Kirkmabreck Quay the foreshore changes markedly to poorly sorted boulders intermixed with fine alluvial sand and mud.

2. CARSLUITH GARDEN SANDS to RAVENSHALL
NX 510 530
3.4km
Low edge (< 10 m)
Marine derive sand and gravels
Marine sands and gravel overlie this straight stretch of coastline. The foreshore consists of a sand and shingle beach overlooking wide tidal flats.

MAP CLASS: **Hinterland Geology and Foreshore Geomorphology**
Assessment date: October 1996
Scale: 1:25 000

KIRKBRIDE BANK TO KIRKDALE BANK
NGR: NX 47-51/50-55



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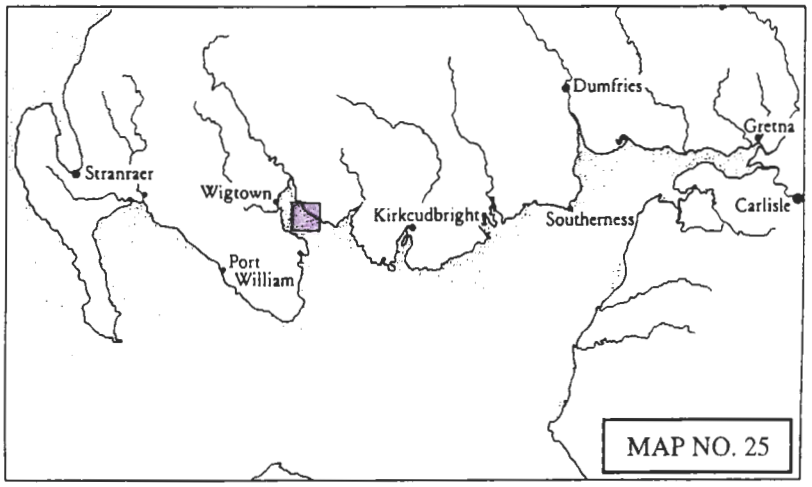
KEY

Hinterland Geology	Derwent Code	Colour
Drift, boulder clay	French Grey	
Drift, boulder clay over visible rock	Dark Violet	
Raised beach and marine deposits	Golden Brown	
Blown sand	Pink Madder Lake	
Glacial sand and gravel	Magenta	
Alluvium	Emerald Green	
Coastal Geomorphology		
Mainly rock platform	Deep vermilion	
Mainly sand	Ultramarine	
Mainly alluvial/marine mud	Venetian Red	
Marsh	May Green	
Coast Edge		
Low edge (<5m)	Thin black line	——
Cliff (>5m)	Solid black line	——
Man made barrier	Black line with spines	
Shingle beach	Small circles	oooooo
Human disturbance	Black carats	^^^^^^

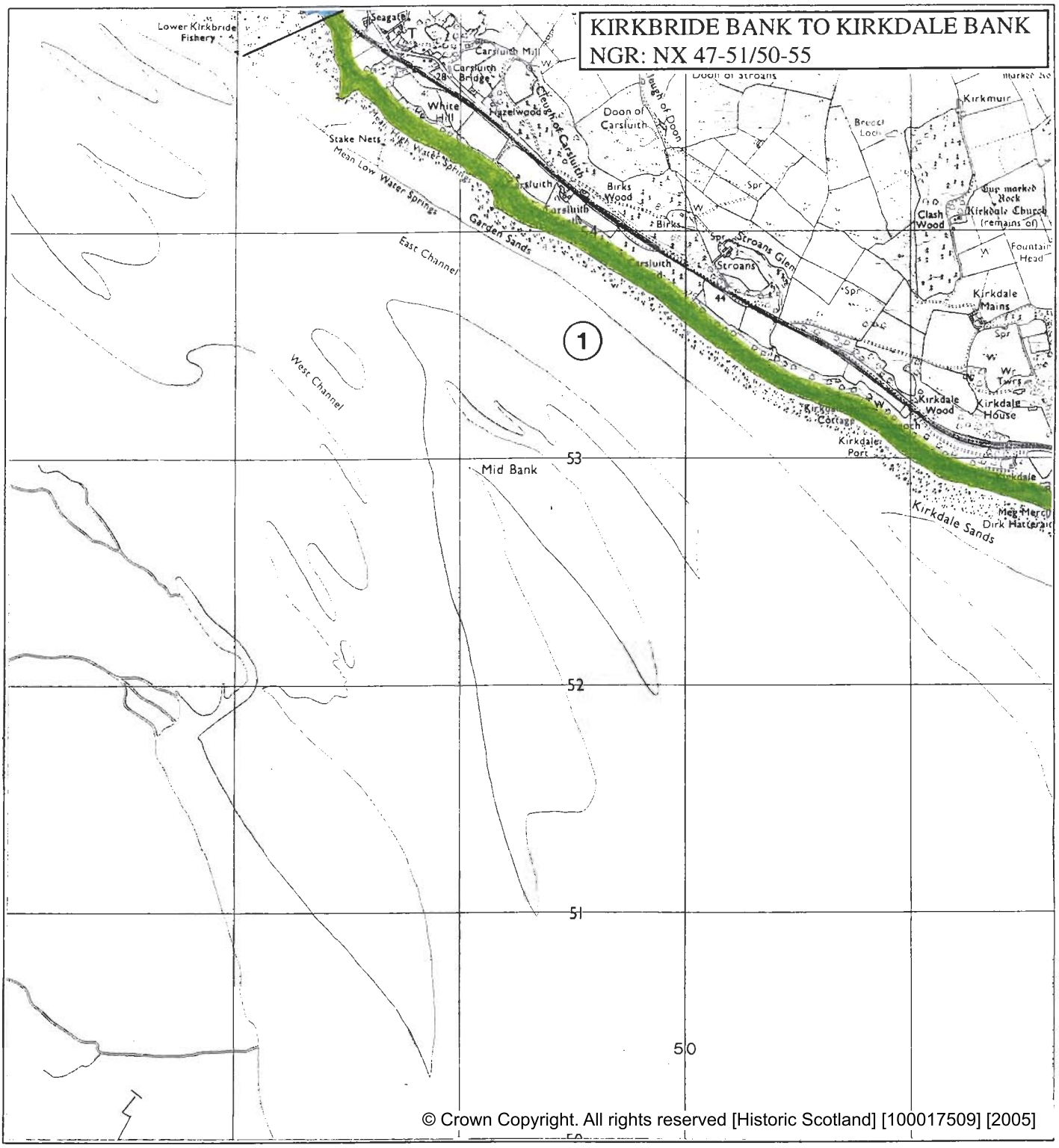


MAP 25: EROSION

---

1. LOWER KIRKBRIDE FISHERY to
RAVENSHALL
NX 250 536
4.5km
Stable
This unit consists of shingle and sandy beaches with a wide intertidal area. The MHWM is consolidated with reed beds and salt marsh vegetation.

KIRKBRIDE BANK TO KIRKDALE BANK
NGR: NX 47-51/50-55



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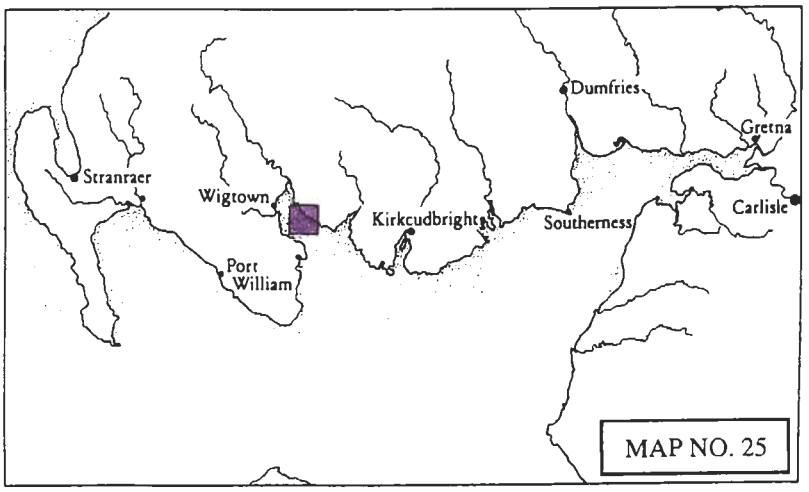
KEY

Erosion class	Derwent Code	Colour
Definitely accreting	Prussian Blue	
Accreting/stable	Light Blue	
Stable	Grass Green	
Stable/eroding	Deep Chrome	
Definitely eroding	Deep Vermilion	
Both accreting and eroding	Imperial Purple	
No access	Blank	
Land below 10m	Straw Yellow	

MAP CLASS: **EROSION**
Assessment date: 02.10.96
Scale 1:25 000



MAP 25: BUILT HERITAGE AND ARCHAEOLOGY

Sites on the Coast Edge & Foreshore

NX 4810 5492
LOWER KIRKBRIDE FISHERY
Fishing Stakes
Uncertain
Fair
Monitor

NX 4865 5438
LOWER KIRKBRIDE FISHERY
Fishing Stakes
Uncertain
Good
Nil

NX 5072 5314
KIRKDALE PORT
Quay
Uncertain
Fair
Nil

Sites in the Hinterland

None

MAP CLASS: **Built Heritage and Archaeology**
Assessment date: September 1996
Scale: 1:25 000

KIRKBRIDE BANK TO KIRKDALE BANK
NGR: NX 47-51/50-55

NX 4810 5492

NX 4865 5438

NX 5072 5314

Lower Kirkbride Fishery
Seagate
Carsluith Mill
Carsluith Bridge
Dalfin
White Hill
Hazelwood
Stake Nets
Mean Low Water Springs
Carsluith
Carsluith Castle
Birks Wood
Birks
Carsluith Wood
Stroans
Stroans Glen
Garden Sands
East Channel
West Channel
Mid Bank
Clash Wood
Kirkdale Church (remains of)
Fountain Head
Kirkdale Mains
Kirkdale Wood
Kirkdale House
Kirkdale Port Cottage
Kirkdale Port
Beach
Kirkdale Bank
Kirkdale Sands
Meg Merrilies
Dirk Hatteraick
53
52
51

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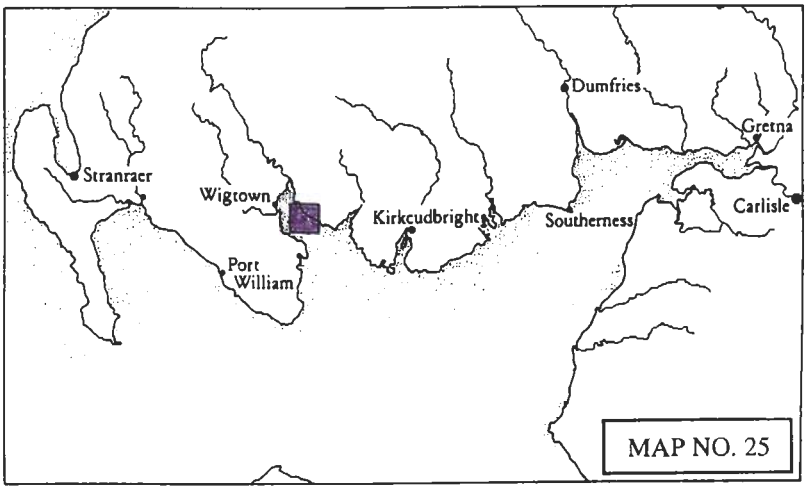
KEY

Site location	Symbol	Colour	Significance
NGR ref. - eg. NX 143 368	Roundel - Solid, (or area)	Red	Protected Ancient Monument
	Cross	Red	Listed Historic Building
	Roundel - Open, (or area)	Red	Monument formally proposed by Historic Scotland for designation
NMRS ref. - eg. NX13 SW17	Roundel - Solid, (or area)	Yellow	Other known Ancient Monument
	Dashed outline	Yellow	Gardens/Designed landscape
	Roundel - Solid, (or area)	Yellow	Undesignated wreck
	Area	Green	Insufficient information; more work needed
	Area	Blue	Probably archaeologically sterile



MAP NO. 25

MAP 26: KIRKDALE BANK TO NEWTON HILL

Hinterland Geology and Coastal Geomorphology: The hinterland geomorphology alters radically as one travels east from Ravenshall Point. Dominated by till over exposed bedrock, the landscape rises sharply. The coastal edge is irregular overlooking steep rock cliffs. Ringdoo Point forms an exposed promontory headland. The shoreline comprises a series of small rocky bays. Low tidal flats with sand and mud occur at the MHWM.

Erosion Class: As previously mentioned, the coastline east to Ravenshall Point is stable. From Ravenshall Point to just east of Ringdoo Point the coastline is considered to be definitely eroding. This is based on the presence of offshore stacks and caves. Modification to the base of the cliffs by wave attack will be an ongoing process. The rate of cliff-edge recession is hard to measure. The exposed position of the coast towards and beyond Ringdoo Point will promote weathering of the cliff face and overlying till cover by wind, rain and spray.

Built Heritage & Archaeology: This stretch of coastline contained a cluster of sites around Kirkclaugh including a motte and bailey, a boatdraught; both situated on the coastal edge; and the original location of a twelfth century cross slab situated further inland. The motte and bailey at Kirkclaugh is suffering from severe coastal erosion and a survey and monitoring programme is recommended. Further south in this stretch of coastline, at Mossyard, is a cup and ring marked stone, one of a series of cup and ring marks in the vicinity. It is under no threat.

Map 26: Hinterland Geology and Coastal Geomorphology

---

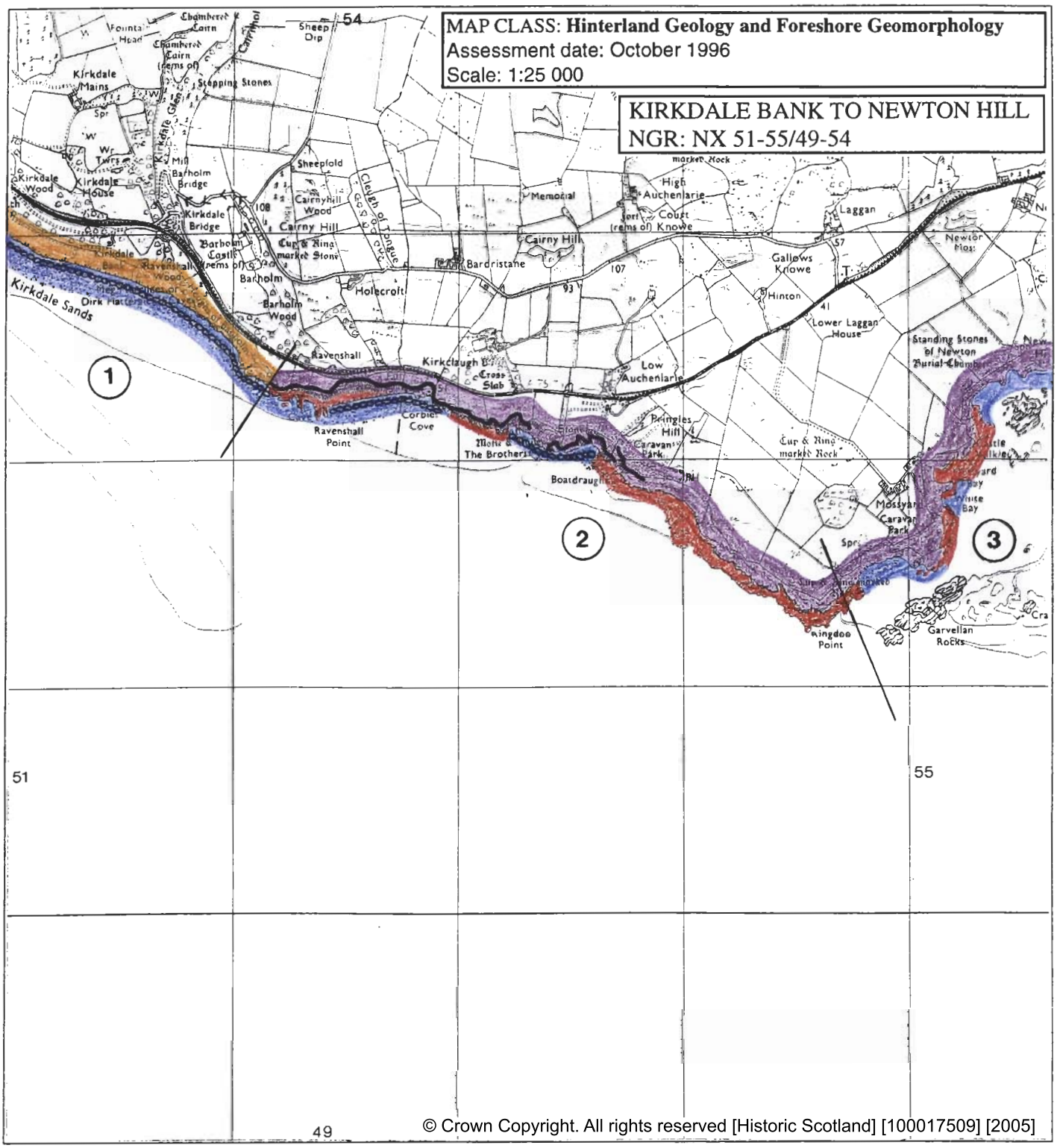
1. CARSLUITH GARDEN SANDS to RAVENSHALL
NX 510 530
3.4km
Low edge (< 10 m)
Marine derive sand and gravels
Marine sands and gravel overlie this straight stretch of coastline. The foreshore consists of a sand and shingle beach overlooking wide tidal flats.

2 RAVENSHALL WOOD to RINGDOO POINT
NX 537 520
3.5km
Cliff (<10m)
Till over exposed rock
Lower reach of Wigton Bay with till overlying exposed rock greywackee platforms on the promontory at Ringdoo Point. Rocks are bounded in parts by boulder and sand up to the MHWM.

3. RINGDOO POINT to DRUMMUCKLOCK CARAVAN PARK
NX 556 524
4km
Cliff (< 5m)
Till over exposed rock
Lower estuary of Fleet Bay. The hinterland consists of till over exposed rock platform. The shoreline is fractured into a series of small rocky bays. Low tidal flats with sand and mud at MHWM.

MAP CLASS: **Hinterland Geology and Foreshore Geomorphology**
Assessment date: October 1996
Scale: 1:25 000

KIRKDALE BANK TO NEWTON HILL
NGR: NX 51-55/49-54



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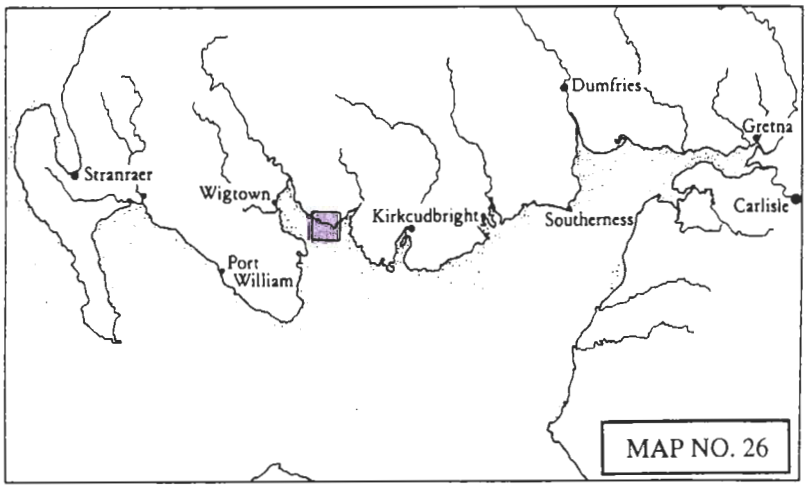
KEY

Hinterland Geology	Derwent Code	Colour
Drift, boulder clay	French Grey	
Drift, boulder clay over visible rock	Dark Violet	
Raised beach and marine deposits	Golden Brown	
Blown sand	Pink Madder Lake	
Glacial sand and gravel	Magenta	
Alluvium	Emerald Green	
Coastal Geomorphology		
Mainly rock platform	Deep vermilion	
Mainly sand	Ultramarine	
Mainly alluvial/marine mud	Venetian Red	
Marsh	May Green	
Coast Edge		
Low edge (<5m)	Thin black line	
Cliff (>5m)	Solid black line	
Man made barrier	Black line with spines	
Shingle beach	Small circles	ooooooo
Human disturbance	Black carats	^^^^^^^



MAP 26: EROSION

---

1. LOWER KIRKBRIDE FISHERY to RAVENSHALL
NX 250 536
4.5km
Stable
This unit consists of shingle and sandy beaches with a wide intertidal area. The MHWM is consolidated with reed beds and salt marsh vegetation.

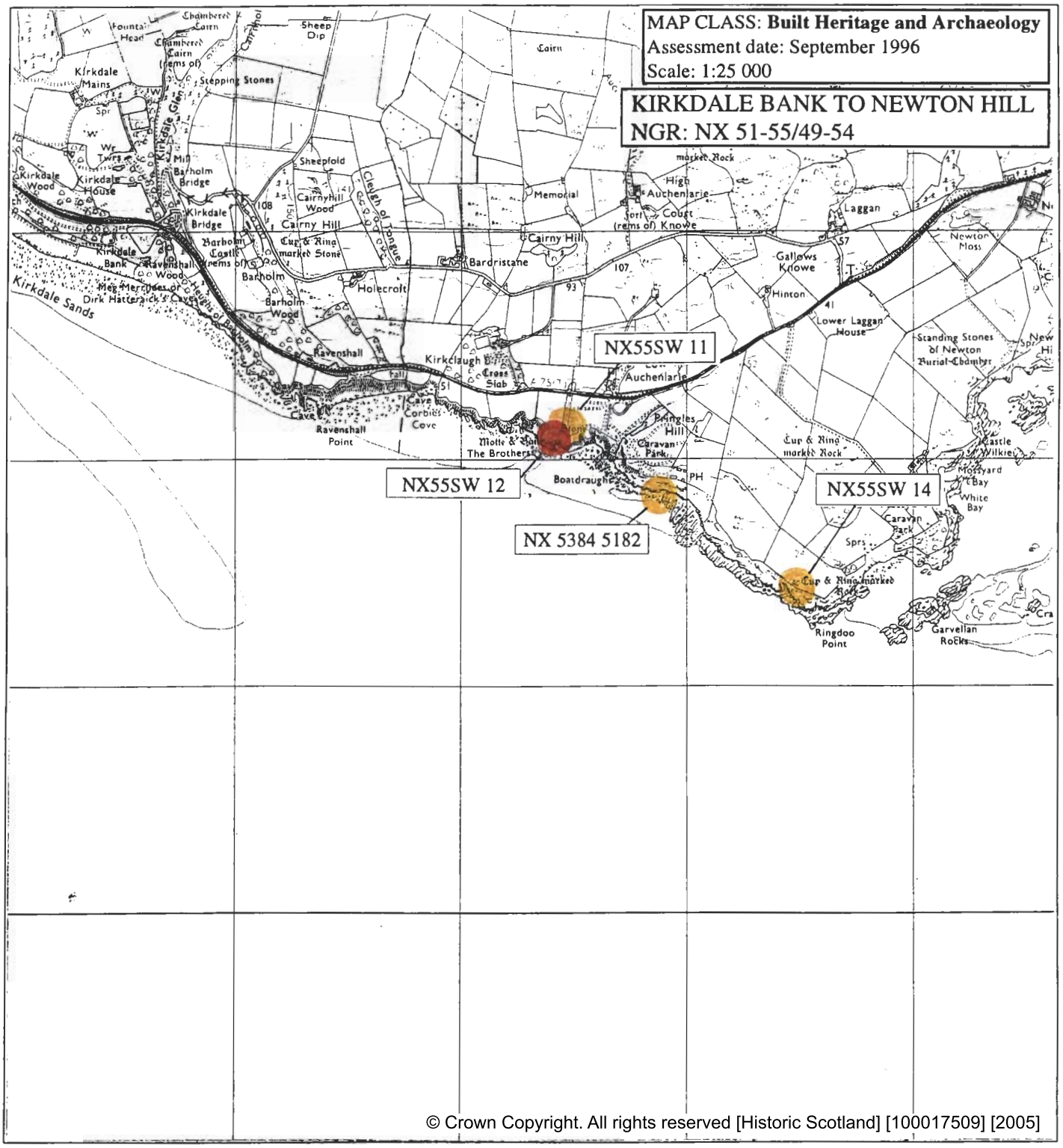
2. RAVENSHALL to south-west of BOATDRAUGHT
NX 535 520
1.8km
Definitely eroding
This unit has an exposed south westerly aspect with an irregular incised crenellated coastal edge. Deep fault gullies and exposed rock platforms persist in parts. Boulders sand and shingle are abrading the base of the Greywackee cliffs. Cliff-edge retreat is considered to be slow due to the resilient nature of the geology.

3. South-west of BOATDRAUGHT to RINGDOO POINT
NX 546 513
1km
Definitely eroding
This unit consists of steep cliffs on an exposed promontory headland. The cliffs are cleaved and folded into narrow gullies. The MHWM lies at the base of the cliffs. It is easy to observe wave-induced or accelerated mass-movement in the numerous faults and clefts which crop out along the cliffs.

4. RINGDOO POINT to CARDONESS PINNACLE
NX 557 524
2.5km
Eroding or stable
With an exposed irregular coastal edge this unit forms the western shore of Fleet Bay. The coastal edge has been modified into a series of small sandy bays with rocky platforms lying offshore. Wave erosion is occurring on the outcropping geology but mass movement is not significant at the present.

MAP CLASS: **Built Heritage and Archaeology**
Assessment date: September 1996
Scale: 1:25 000

KIRKDALE BANK TO NEWTON HILL
NGR: NX 51-55/49-54



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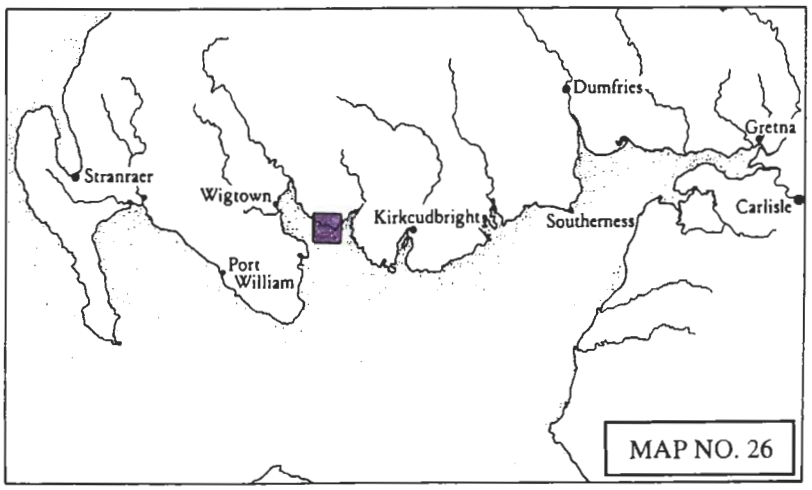
KEY

Site location	Symbol	Colour	Significance
	Roundel - Solid, (or area)	Red	Protected Ancient Monument
NGR ref. - eg.	Cross	Red	Listed Historic Building
NX 143 368	Roundel - Open, (or area)	Red	Monument formally proposed by Historic Scotland for designation
	Roundel - Solid, (or area)	Yellow	Other known Ancient Monument
NMRS ref. - eg.	Dashed outline	Yellow	Gardens/Designed landscape
NX13 SW17	Roundel - Solid, (or area)	Yellow	Undesignated wreck
	Area	Green	Insufficient information; more work needed
	Area	Blue	Probably archaeologically sterile



MAP 26: BUILT HERITAGE AND ARCHAEOLOGY

Sites on the Coast Edge & Foreshore

NX55SW 12
NX 5341 5210
KIRKCLAUGH
Motte & Bailey
Scheduled Ancient Monument
12th century
Poor
Survey & Monitor

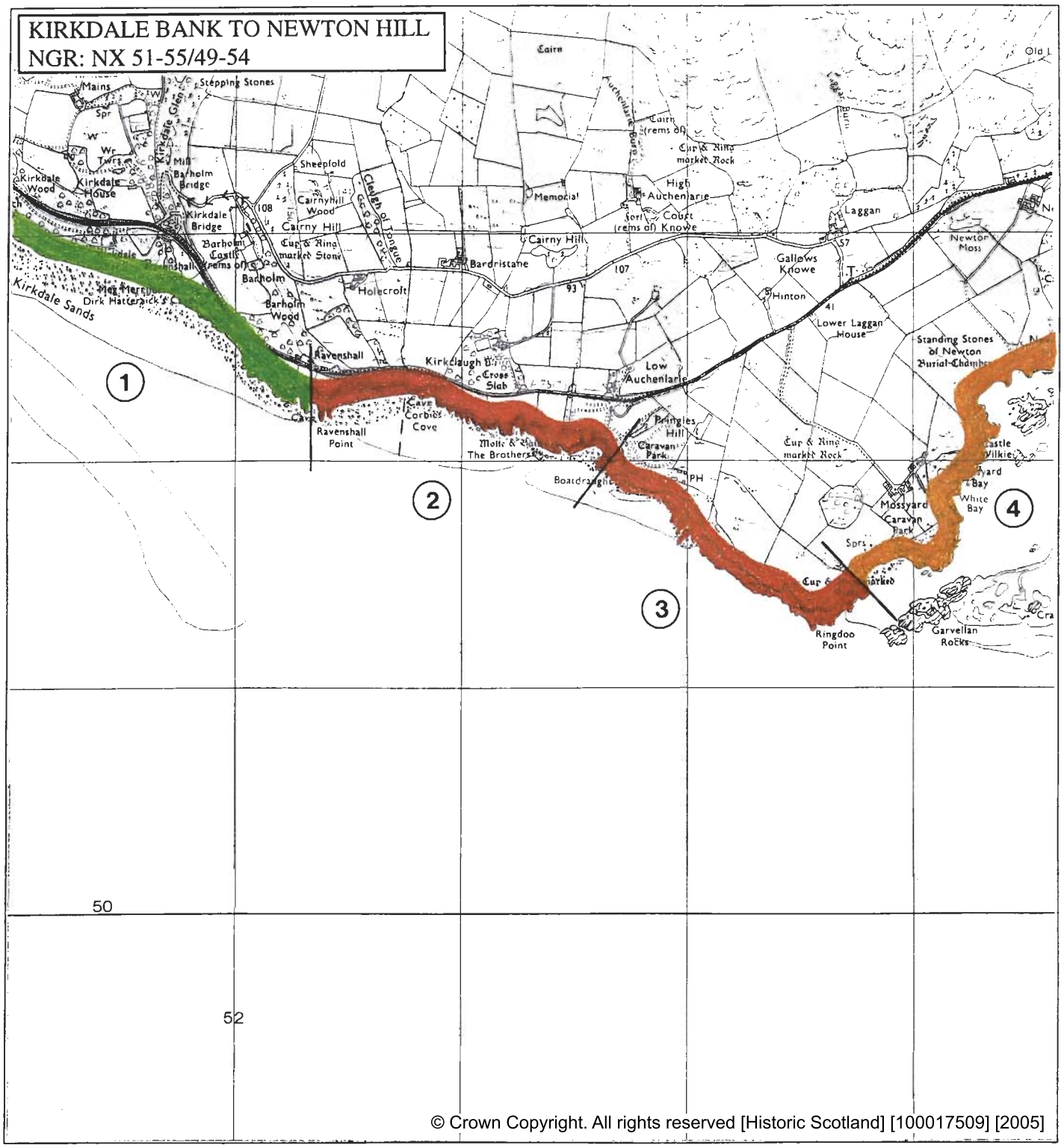
NX 5384 5182
KIRKCLAUGH
Boatdraught
Uncertain
Good
Nil

Sites in the Hinterland

NX55SW 11
NX 5344 5212
KIRKCLAUGH
Site of Cross Slab
12th century
Good
Nil

NX55SW 14
NX 5444 5143
MOSSYARD
Cup & Ring Mark
3rd & 2nd Mill BC
Good
Nil

KIRKDALE BANK TO NEWTON HILL
NGR: NX 51-55/49-54



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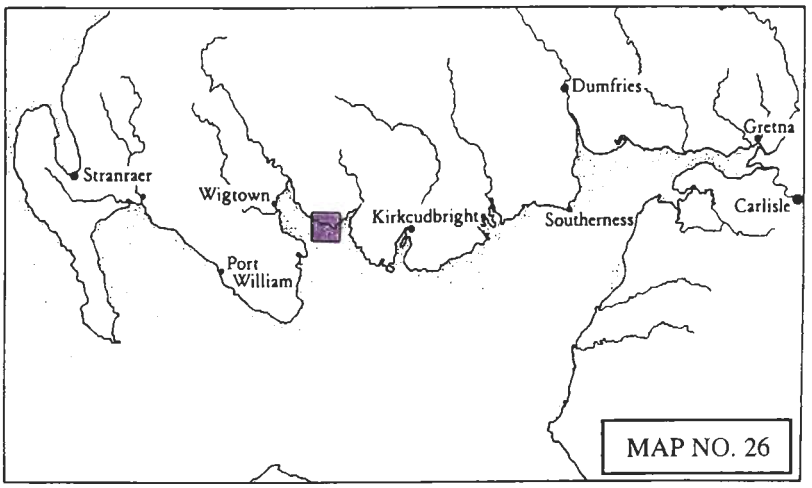
KEY

Erosion class	Derwent Code	Colour
Definitely accreting	Prussian Blue	
Accreting/stable	Light Blue	
Stable	Grass Green	
Stable/eroding	Deep Chrome	
Definitely eroding	Deep Vermilion	
Both accreting and eroding	Imperial Purple	
No access	Blank	
Land below 10m	Straw Yellow	

MAP CLASS: **EROSION**
Assessment date: 02.10.96
Scale 1:25 000



MAP 27: NEWTON HILL TO SANDGREEN

Hinterland Geology and Coastal Geomorphology: This region of the coast consists of the mid and upper tidal reach of Fleet Bay. The hinterland geomorphology surrounding the coast is predominantly till over exposed outcropping rock. Boulder and shingle beaches are common. At the head of the Fleet Bay salt-marsh has colonised the region in the vicinity of the canalised River Fleet. South of the entrance to the River Fleet, the hinterland rises and becomes more irregular towards Rough Point. At low tide the bay is empty exposing low tidal mud flats and former river channels. The land surrounding the Fleet canal is low lying and below 5m O.D.

Erosion Class: The coastline from Ringdoo Point to Cardoness Pinnacle is irregular and incised and considered to eroding or stable. Beyond Cardoness Pinnacle to Rough Point the coastline is classified as accreting or stable.

Built Heritage & Archaeology: This section contains a scattered distribution of sites located along the edges of Fleet Bay, predominantly dating to the eighteenth, nineteenth and twentieth centuries. These sites include the listed buildings of Cardoness Estate, Ardwall House, Skyreburn Bridge, Cally Park, and stake nets, breakwaters and floodbanks around Fleet Bay. None of these sites is threatened and requires no monitoring. In addition, two eleventh and twelfth century monuments survive on the west side of Fleet Bay; Green Tower Motte and a cross-slab, originally found at Ardwall Isle, but now located in the grounds of Ardwall house. The former is under no threat from coastal erosion; of more significance to its condition is animal impact.

Map 27: Hinterland Geology and Coastal Geomorphology

1. RINGDOO POINT to DRUMMUCKLOCK CARAVAN PARK
NX 556 524
4km
Cliff (< 5m)
Till over exposed rock
Lower estuary of Fleet Bay. The hinterland consists of till over exposed rock platform. The shoreline is fractured into a series of small rocky bays. Low tidal flats with sand and mud at MHWM.

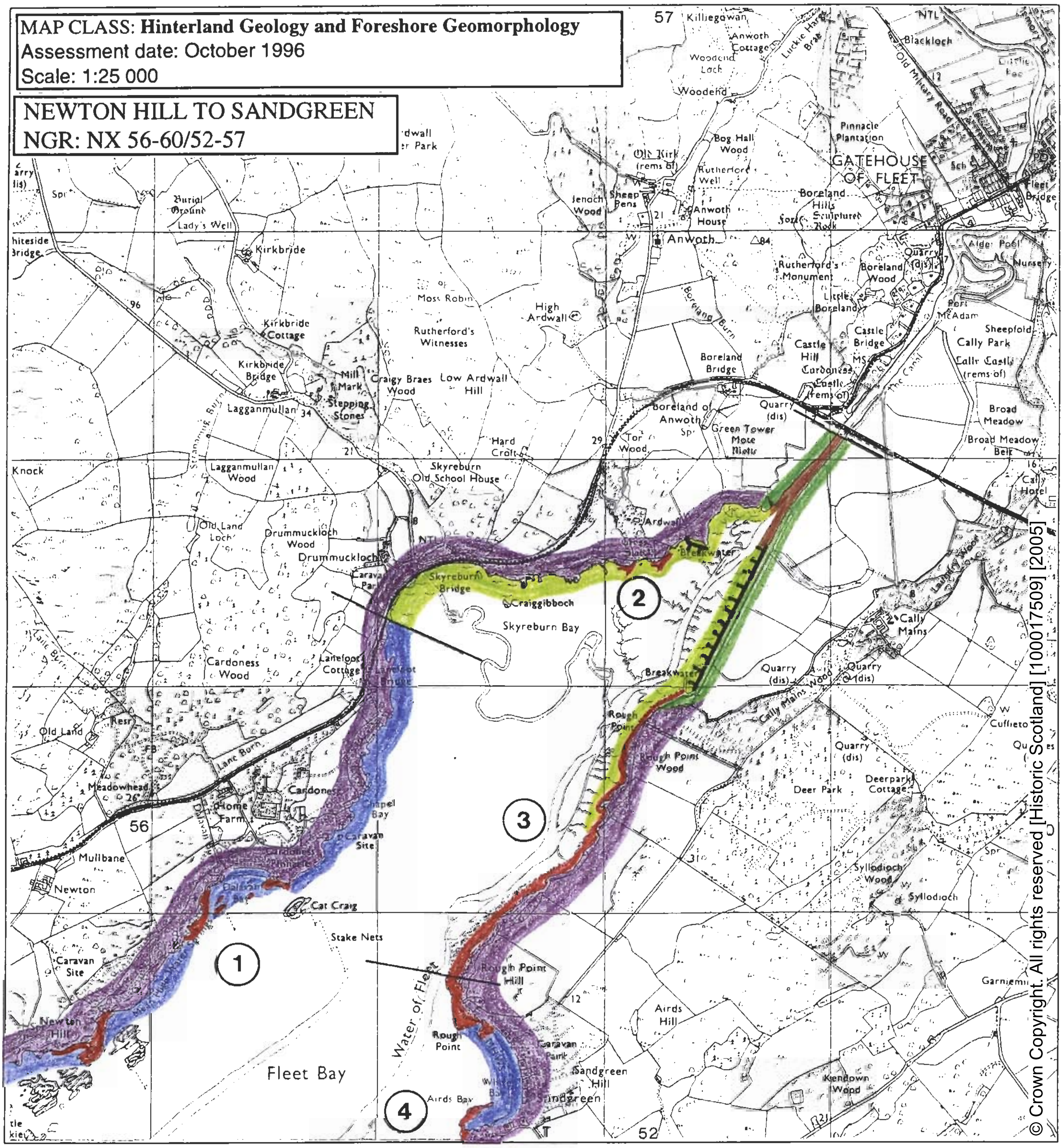
2. DRUMMUCKLOCK CARAVAN PARK to A75T BRIDGE
NX 583 546
2.3k
Low edge (< 10m)
Till and alluvium
The head of Fleet Bay consisting of till on the hinterland. Incised salt-marsh has formed within the bay head. Towards the A75 road bridge alluvial mud has formed along a canal.

3. A75T BRIDGE to ROUGH POINT HILL
NX 580 535
3km
Low edge (<5m)
Till over exposed rock
East side of upper reach of Fleet Bay with till overlying greywackee platforms. Salt-marsh is established alongside the main river channel. Boulders and estuarine mud occurs at Rough Point.

4. ROUGH POINT HILL south to BARR HILL
NX 573 520
4km
Cliff (< 10m)
Till over exposed rock
Highly irregular coastline deeply incised with wide gullies. Till overlies outcropping greywackee platforms. Boulders, intermixed with sand and estuarine mud is common along the shoreline.

MAP CLASS: **Hinterland Geology and Foreshore Geomorphology**
Assessment date: October 1996
Scale: 1:25 000

NEWTON HILL TO SANDGREEN
NGR: NX 56-60/52-57



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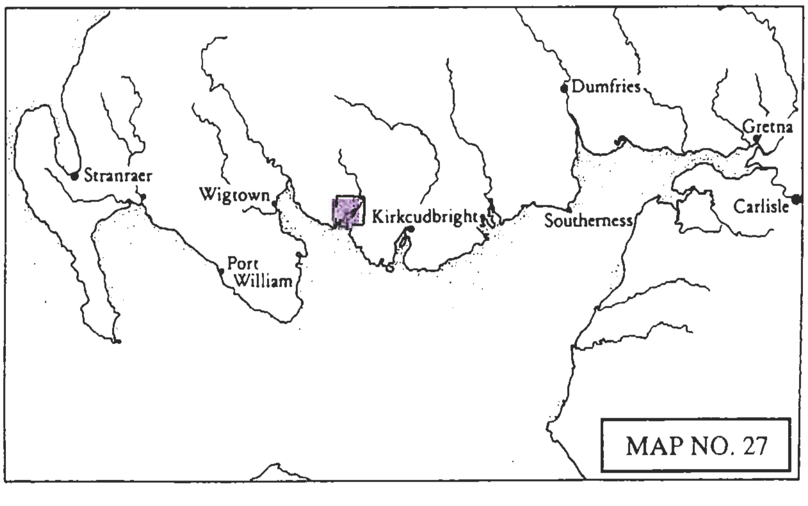
KEY

Hinterland Geology	**Derwent Code**	**Colour**
Drift, boulder clay	French Grey	▨
Drift, boulder clay over visible rock	Dark Violet	🟪
Raised beach and marine deposits	Golden Brown	🟧
Blown sand	Pink Madder Lake	🟥
Glacial sand and gravel	Magenta	🟪
Alluvium	Emerald Green	🟩
Coastal Geomorphology		
Mainly rock platform	Deep vermilion	🟥
Mainly sand	Ultramarine	🟦
Mainly alluvial/marine mud	Venetian Red	🟫
Marsh	May Green	🟨
Coast Edge		
Low edge (<5m)	Thin black line	—
Cliff (>5m)	Solid black line	━
Man made barrier	Black line with spines	┳┳┳┳┳
Shingle beach	Small circles	oooooo
Human disturbance	Black carats	^^^^^^^



MAP NO. 27

MAP 27: EROSION

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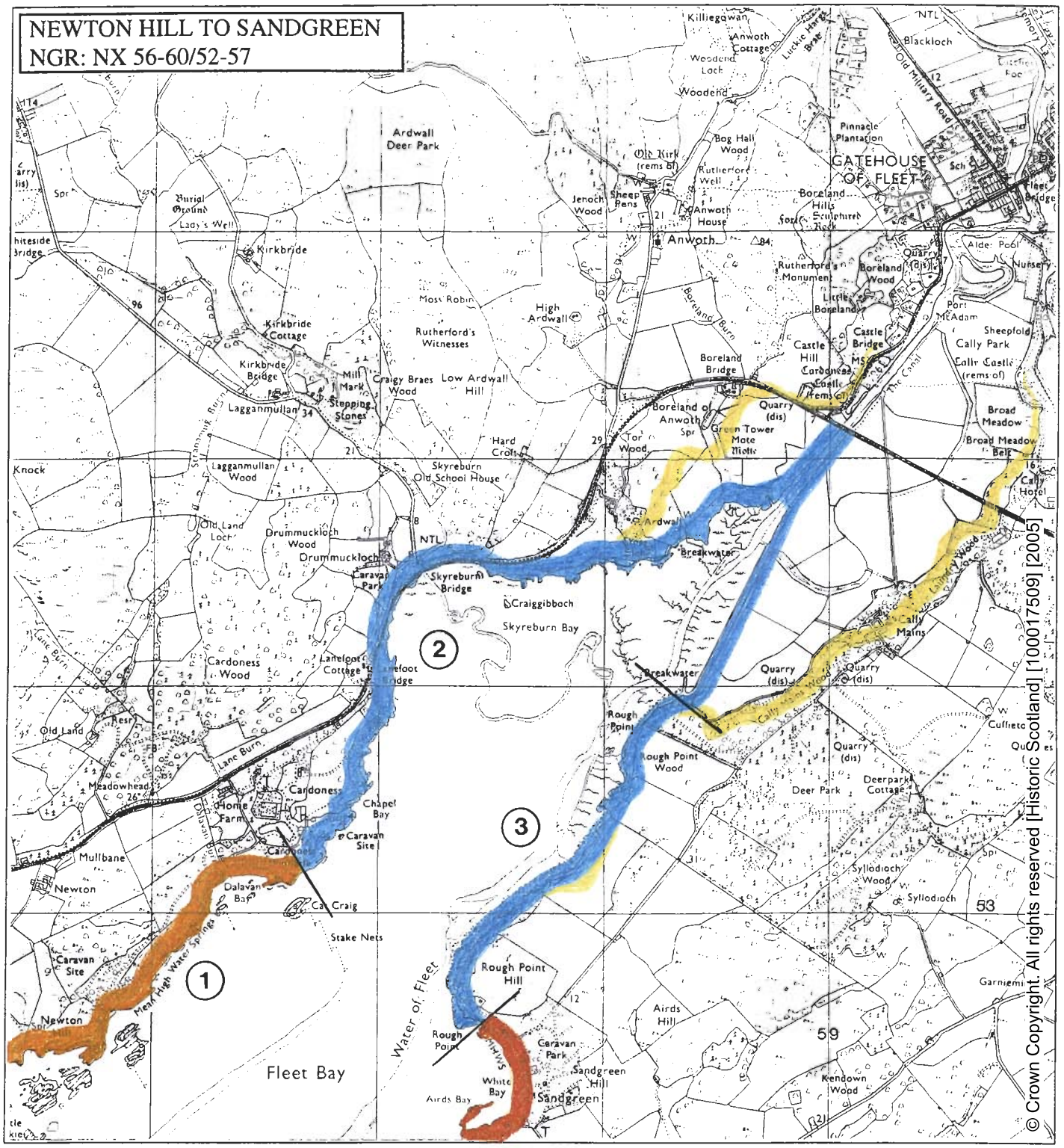
1. RINGDOO POINT to CARDONESS PINNACLE
NX 557 524
2.5km
Eroding or stable
With an exposed irregular coastal edge this unit forms the western shore of Fleet Bay. The coastal edge has been modified into a series of small sandy bays with rocky platforms lying offshore. Wave erosion is occurring on the outcropping geology but mass movement is not significant at the present

2. CARDONESS PINNACLE to ROUGH POINT WOOD
NX 576 544
3.5km
Accreting or stable
This unit forms the inner tidal reach of Fleet Bay. Both sides of the bay are backed by salt marsh and mud flats. High sediment loads are being focused at the mouth of the canalised Water of Fleet. Owing to the richness in shoreline vegetation this unit appears to be stable.

3. ROUGH POINT WOOD to ROUGH POINT
NX 575 530
1.7km
Accreting or stable
This unit is generally stable owing to the consolidating nature of the salt marsh near Rough Point Wood. Towards Rough Point Hill the intertidal zone becomes rocky with boulders and accreting mud banks.

NEWTON HILL TO SANDGREEN
NGR: NX 56-60/52-57



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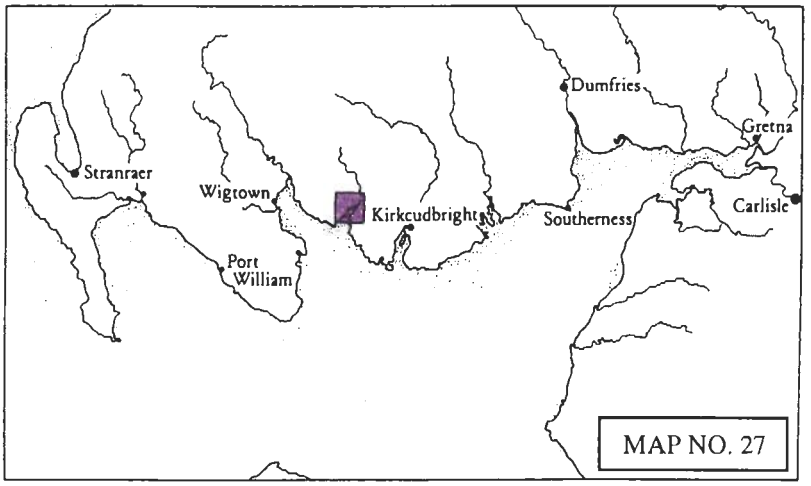
KEY

Erosion class	Derwent Code	Colour
Definitely accreting	Prussian Blue	
Accreting/stable	Light Blue	
Stable	Grass Green	
Stable/eroding	Deep Chrome	
Definitely eroding	Deep Vermilion	
Both accreting and eroding	Imperial Purple	
No access	Blank	
Land below 10m	Straw Yellow	

MAP CLASS: **EROSION**
Assessment date: 03.10.96
Scale 1:25 000



MAP 27: BUILT HERITAGE AND ARCHAEOLOGY

Sites on the Coast Edge & Foreshore

NX 5670 5300
FLEET BAY
Stake Nets
Uncertain
Good
Nil

NX 59 55
CALLY PARK
Designed Landscape
19th/20th century
Good
Nil

NX 5880 5478
CALLY MAINS
Flood Bank
Uncertain
Good
Nil

NX 5835 5398
CALLY MAINS
Breakwater
Uncertain
Good
Nil

Sites in the Hinterland

NX 56 53
CARDONESS ESTATE
Buildings and Chapel
Statutory Listed Buildings
18th-20th century
Good
Nil

NX55SE 9
NX 5717 5454
SKYREBURN BRIDGE
Old Road Bridge
19th century
Good
Nil

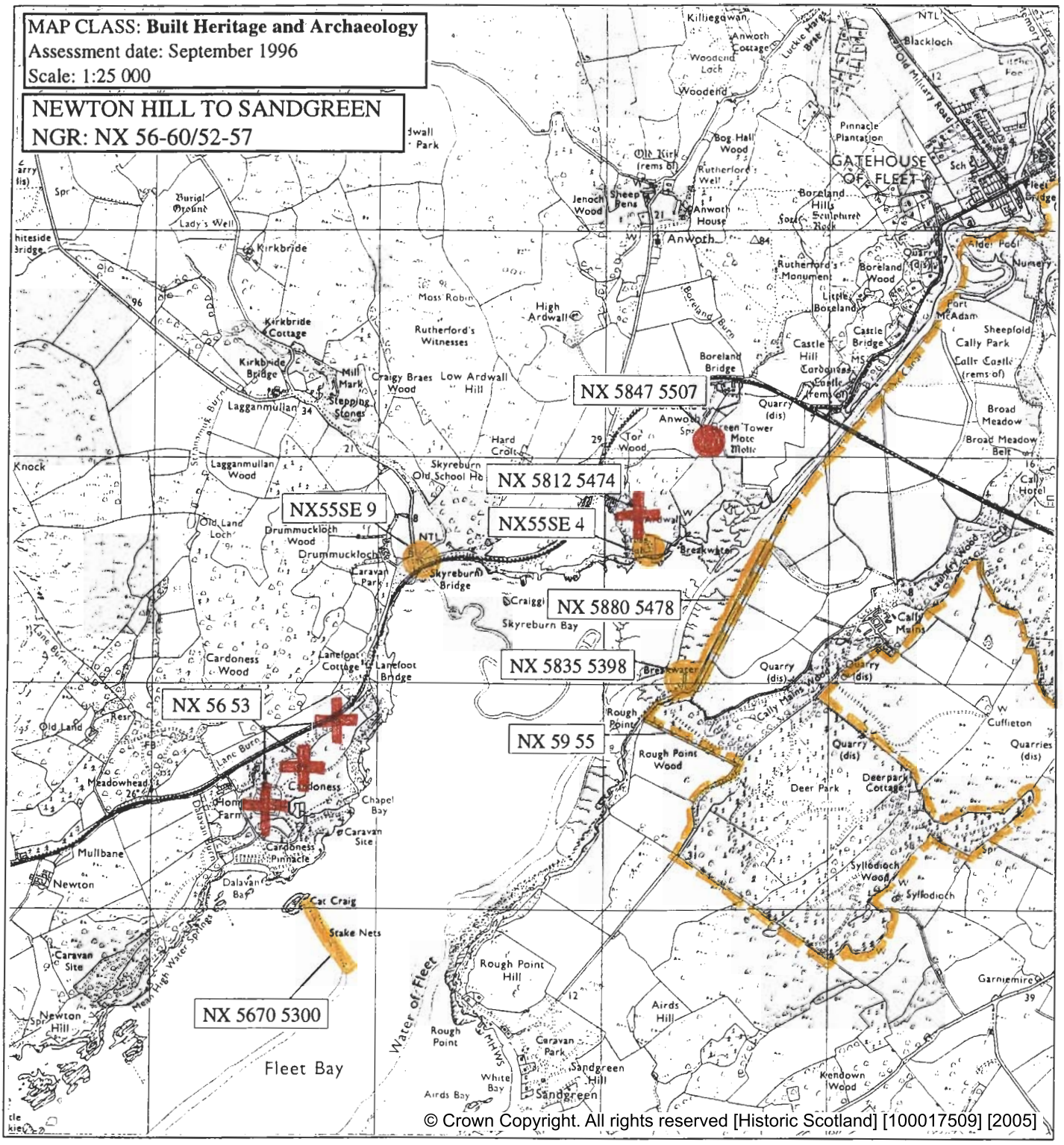
NX 5812 5474
ARDWALL HOUSE
House
Statutory Listed Building
18th century
Good
Nil

NX55SE 4
NX 5819 5460
ARDWALL HOUSE
Cross-Slab
11th century
Uncertain; access denied
Nil

NX 5847 5507
GREEN TOWER MOTTE
Motte & Bailey
Scheduled Ancient Monument
12th century
Good
Nil

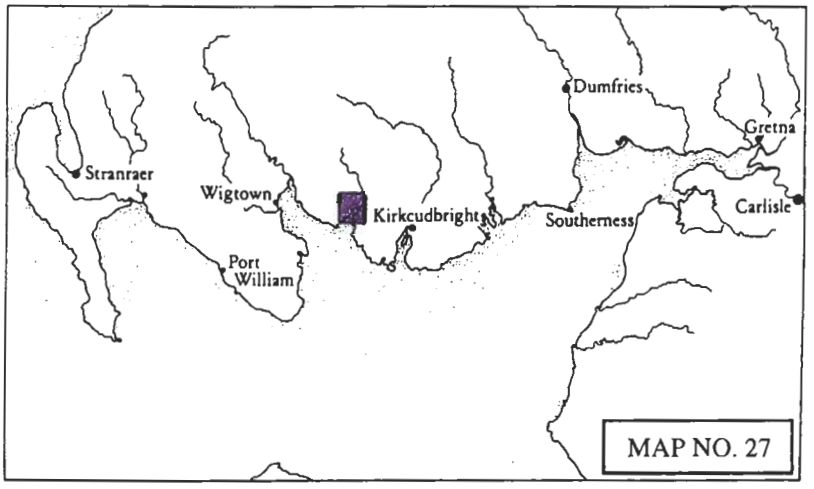
MAP CLASS: **Built Heritage and Archaeology**
Assessment date: September 1996
Scale: 1:25 000

NEWTON HILL TO SANDGREEN
NGR: NX 56-60/52-57



KEY

Site location	Symbol	Colour	Significance
NGR ref. - eg. NX 143 368	Roundel - Solid, (or area)	Red	Protected Ancient Monument
	Cross	Red	Listed Historic Building
	Roundel - Open, (or area)	Red	Monument formally proposed by Historic Scotland for designation
NMRS ref. - eg. NX13 SW17	Roundel - Solid, (or area)	Yellow	Other known Ancient Monument
	Dashed outline	Yellow	Gardens/Designed landscape
	Roundel - Solid, (or area)	Yellow	Undesignated wreck
	Area	Green	Insufficient information; more work needed
	Area	Blue	Probably archaeologically sterile



MAP 28: SANDGREEN TO MEGGERLAND POINT

Hinterland Geology and Coastal Geomorphology: The coast towards Carrick Point is deeply incised and overlain by till. Immediately south of Knockbrex a small parcel of raised beach deposits occur. Further south towards Meggerland Point, till overlies exposed rock platform. The cliff-edge becomes noticeably irregular and incised along softer planes of weakness. Differential erosion of the cliffs results in the creation of a series of sandy bays, flanked by rocky headlands, with pinnacles and stacks lying just offshore.

Erosion Class: This length of coastline is exposed with a south westerly aspect and as a consequence of long-term wave attack, the shore appears to eroding albeit slowly.

Built Heritage & Archaeology: The majority of the sites in this stretch of the coastline are clustered on or opposite Ardwall Isle. Ardwall Isle itself, excavated in 1964-5, was the location of a burial ground, chapel, cross slabs, hall house and a tower, forming a discontinuous sequence of varied use from possibly the fifth to the nineteenth century (Thomas, 1966, 127-88). Cord rig agriculture is also apparent from aerial photographs. Opposite Ardwall Isle, on the mainland, are Knockbrex landing places and bathing house. These three sites are adversely affected to varying degrees by coastal erosion and storm damage and monitoring is recommended. Castle Haven, excavated and 'reconstructed' earlier this century (Barbour, 1907), may possibly, accepting doubts as to the authenticity of its present form, represent a unique example of a galleried dun in Dumfries and Galloway.. Coastal erosion and storm damage is minimal; the most significant threat being the effect of ivy and other vegetation on the stability of the monument.

Map 28: Hinterland Geology and Coastal Geomorphology

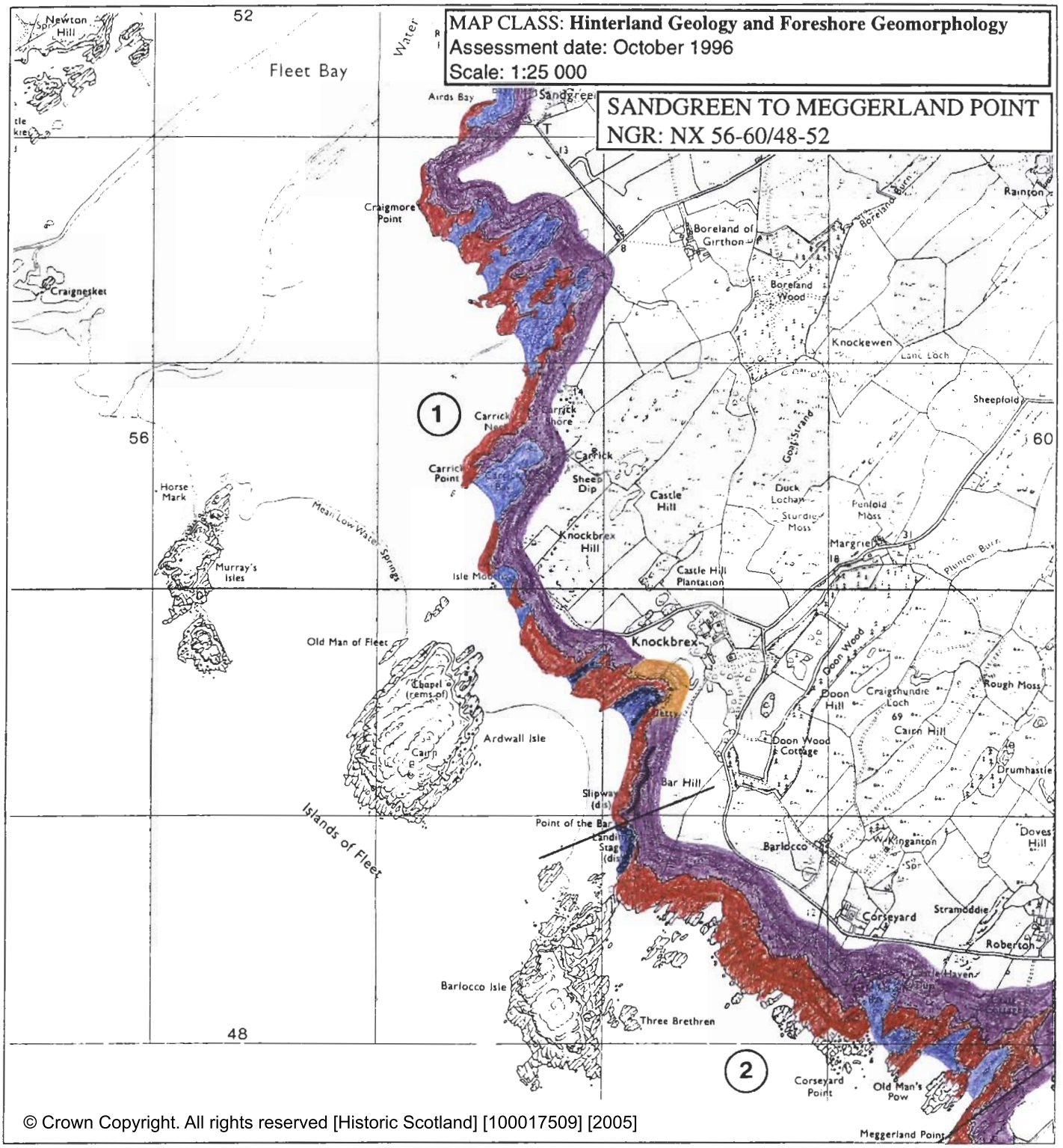
---

1. ROUGH POINT HILL south to BARR HILL
NX 573 520
4km
Cliff (< 10m)
Till over exposed rock
Highly irregular coastline deeply incised with wide gullies. Till overlies outcropping greywackee platforms. Boulders, intermixed with sand and estuarine mud is common along the shoreline.

2. BARRHILL to MEGGERLAND POINT
NX 590 483
2km
Cliff (< 10m)
Till over exposed rock
Very irregular coastline with outcropping rock platform broken into a series of deep gullies caused by the weathering of weaker mudstones between the dipping greywackees.

MAP CLASS: **Hinterland Geology and Foreshore Geomorphology**
Assessment date: October 1996
Scale: 1:25 000

SANDGREEN TO MEGGERLAND POINT
NGR: NX 56-60/48-52



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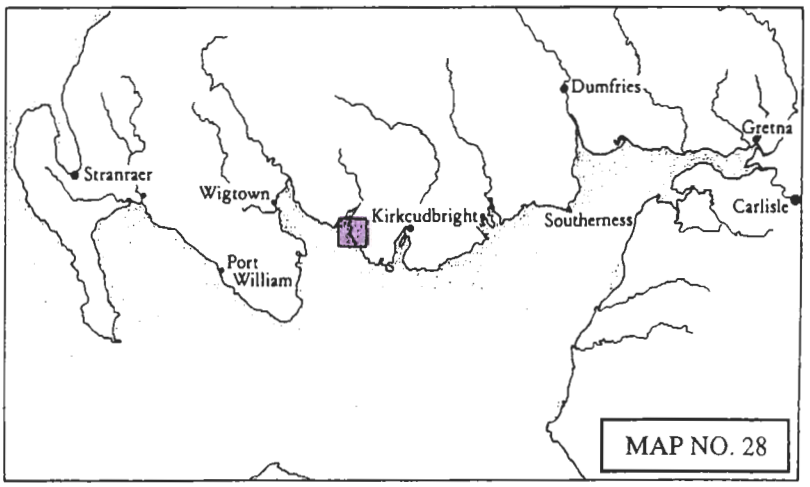
KEY

Hinterland Geology	Derwent Code	Colour
Drift, boulder clay	French Grey	
Drift, boulder clay over visible rock	Dark Violet	
Raised beach and marine deposits	Golden Brown	
Blown sand	Pink Madder Lake	
Glacial sand and gravel	Magenta	
Alluvium	Emerald Green	
Coastal Geomorphology		
Mainly rock platform	Deep vermilion	
Mainly sand	Ultramarine	
Mainly alluvial/marine mud	Venetian Red	
Marsh	May Green	
Coast Edge		
Low edge (<5m)	Thin black line	
Cliff (>5m)	Solid black line	
Man made barrier	Black line with spines	
Shingle beach	Small circles	oooooo
Human disturbance	Black carats	^^^^^^



MAP 28: EROSION

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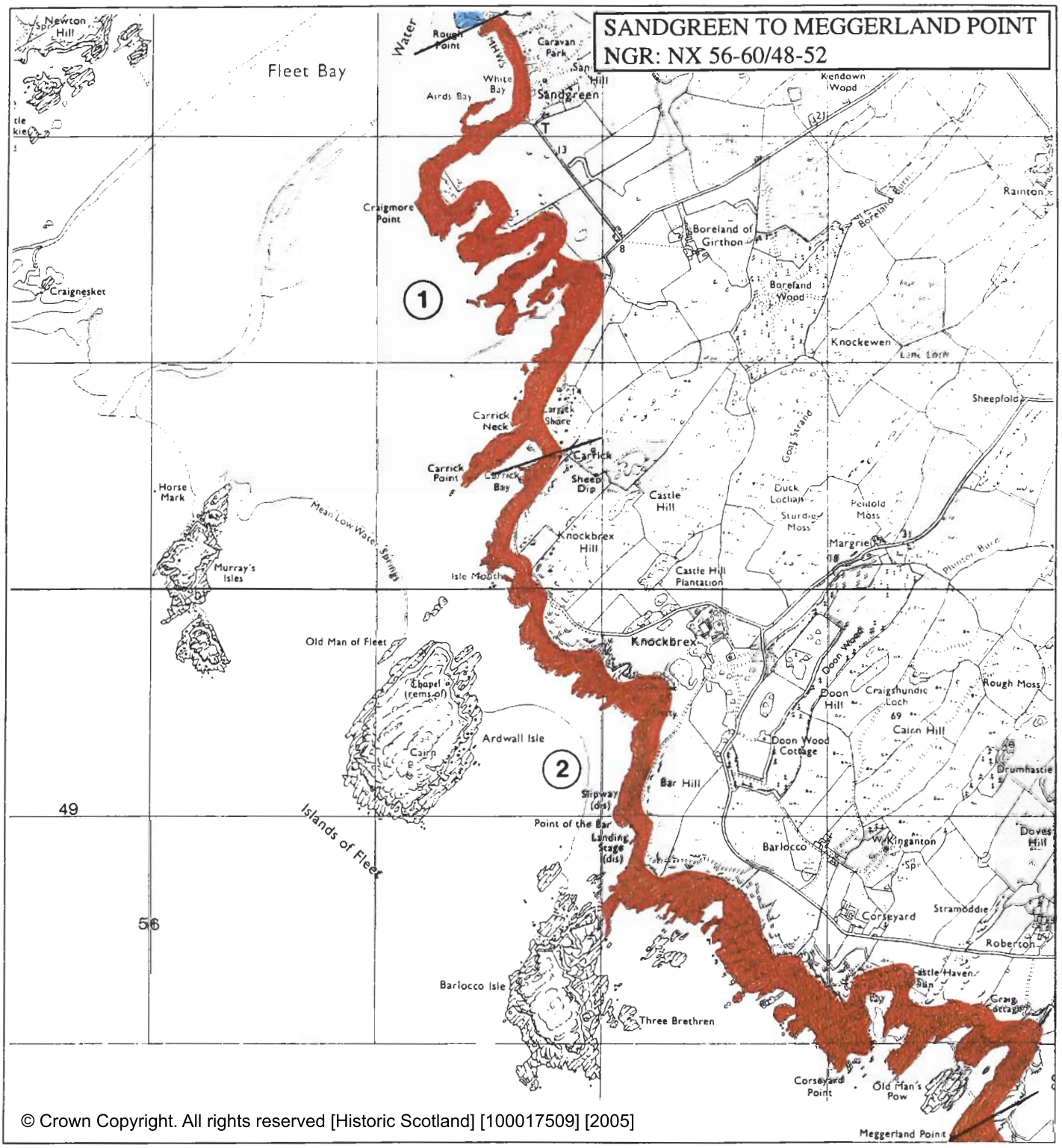
1. ROUGH POINT to CARRICK BAY
NX 577 535
3km
Eroding or stable
This unit has an irregular cliff-edge that has been incised into large channels. With a south-westerly aspect this part of the coast is exposed to westerly gales. Wave cutting at the base is evident and rock fall litters the numerous gullies that have been formed along the fault planes.
The rate of cliff retreat is hard to predict but it is likely to be constant as the overlying till is constantly being weathered into scree-like formations

1. CARRICK BAY to MEGGERLAND POINT
NX 580 487
5km
Definitely eroding
This unit has an exposed south westerly aspect. The coastal edge is very irregular with deep incisions caused by wave action. Exposed rock platform and stacks form the sides of deep gullies. Erosion processes are active, with waves removing the slumped material and eroding the base of the slips and slumps. Barlocco Isle (NX 578 480 offers no shelter to this exposed coastal region.

SANDGREEN TO MEGGERLAND POINT
NGR: NX 56-60/48-52



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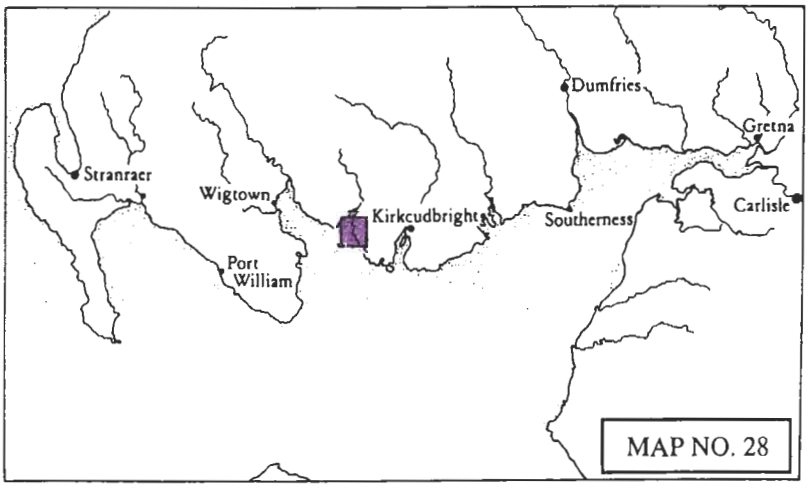
KEY

Erosion class	Derwent Code	Colour
Definitely accreting	Prussian Blue	
Accreting/stable	Light Blue	
Stable	Grass Green	
Stable/eroding	Deep Chrome	
Definitely eroding	Deep Vermilion	
Both accreting and eroding	Imperial Purple	
No access	Blank	
Land below 10m	Straw Yellow	

MAP CLASS: **EROSION**
Assessment date: 03.10.96
Scale 1:25 000



MAP 28: BUILT HERITAGE AND ARCHAEOLOGY

Sites on the Coast Edge & Foreshore

NX54NE 6
NX 5732 4960
ARDWALL ISLE
Chapel, Burial ground, Cross-slabs, Hall-house, Tower
Scheduled Ancient Monuments
5/6th century AD - 19th century
Uncertain; not visited
Nil

NX54NE 9
NX 5820 4947
KNOCKBREX BAY
Landing Place
Uncertain
Fair
Monitor

NX 5820 4890
KNOCKBREX
Bathing House & Landing Place
Statutory Listed Building
Early 20th century
Poor
Monitor

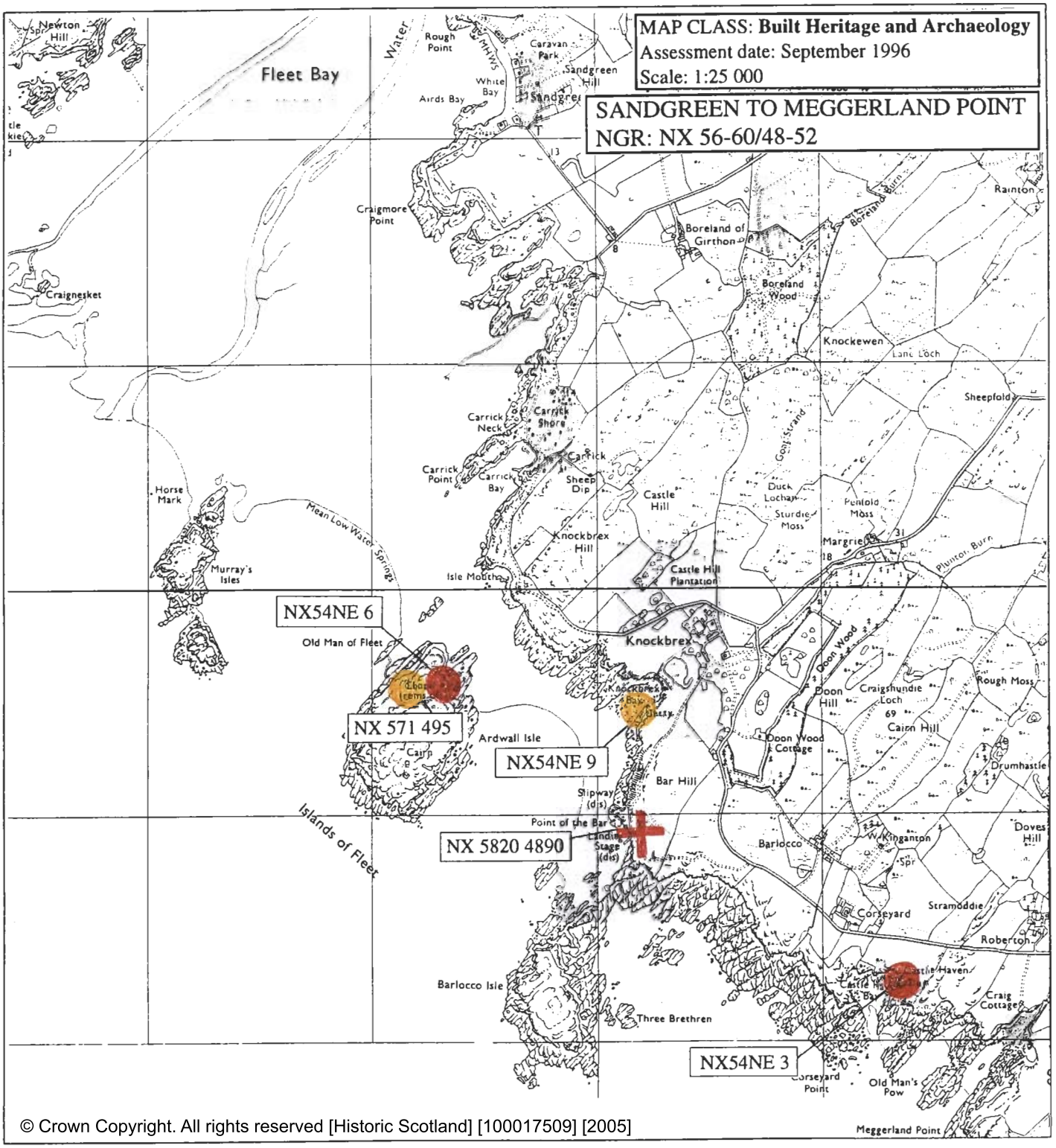
NX54NE 3
NX 5934 4827
CASTLE HAVEN
Dun
Scheduled Ancient Monument
1st Mill BC/AD
Fair
Monitor

Sites in the Hinterland

NX 571 495
ARDWALL ISLE
Cord Rig Agriculture
Uncertain
Uncertain; not visited
Nil

MAP CLASS: **Built Heritage and Archaeology**
Assessment date: September 1996
Scale: 1:25 000

SANDGREEN TO MEGGERLAND POINT
NGR: NX 56-60/48-52



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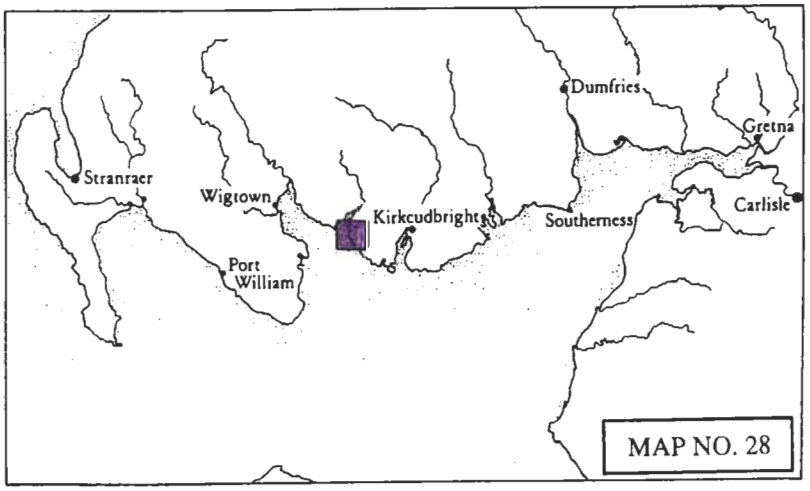
KEY

Site location	Symbol	Colour	Significance
	Roundel - Solid, (or area)	Red	Protected Ancient Monument
NGR ref. - eg.	Cross	Red	Listed Historic Building
NX 143 368	Roundel - Open, (or area)	Red	Monument formally proposed by Historic Scotland for designation
	Roundel - Solid, (or area)	Yellow	Other known Ancient Monument
NMRS ref. - eg.	Dashed outline	Yellow	Gardens/Designed landscape
NX13 SW17	Roundel - Solid, (or area)	Yellow	Undesignated wreck
	Area	Green	Insufficient information; more work needed
	Area	Blue	Probably archaeologically sterile



MAP 29: MEGGERLAND POINT TO MULL OF ROSS

Hinterland Geology and Coastal Geomorphology: This region of the coast has an irregular cliff-edge overlain by till as far as Ringdoo Point (NX 609459). Here glacial sands and gravel outcrop above a very fractured cliff-edge. Morainic drift outcrops at Borness Point. Here an extensive exposures of well-bedded greywackees of the Cairgidown Formation (Hawick Group). The greywackee beds are repeatedly folded and cleaved. Brighouse Bay has a wide stretch of sand between the high and low water marks. High cliff-platform continues eastwards from Mull Point.

Erosion Class: This coastline is classified as definitely eroded. It is severely effected by wave attack and wave-induced sediment transportation. Erosion is evident below the MHWM as tabular wave-cut platforms occur at Borness Point. The long fetch up Brighouse Bay is scouring out the softer silt-stones at the base of the greywackee cliffs.

Built Heritage & Archaeology: The majority of sites in the scattered distribution contained in this stretch of the coastline belong to the first millennium BC/AD and include promontory forts, settlements, an enclosure and a cave. All are situated on the coastal edge and are suffering from varying degrees of coastal and wind erosion. Visitor impact, affecting in particular Borness Batteries, should also be taken into account. Bone Cave, Borness, situated close by and excavated between 1872 and 1878, is now inaccessible and thus possibly indicative of coastal erosion in the last century. Excavations of both Bone Cave and Brighouse Bay have yielded evidence of Romano-British occupation in this area of the coast (Clarke, 1876; Clarke, 1878; Curle, 1932; Maynard et al, 1994). A programme of surveying and monitoring of the erosion of this stretch of the coast is highly recommended.

Map 29: Hinterland Geology and Coastal Geomorphology

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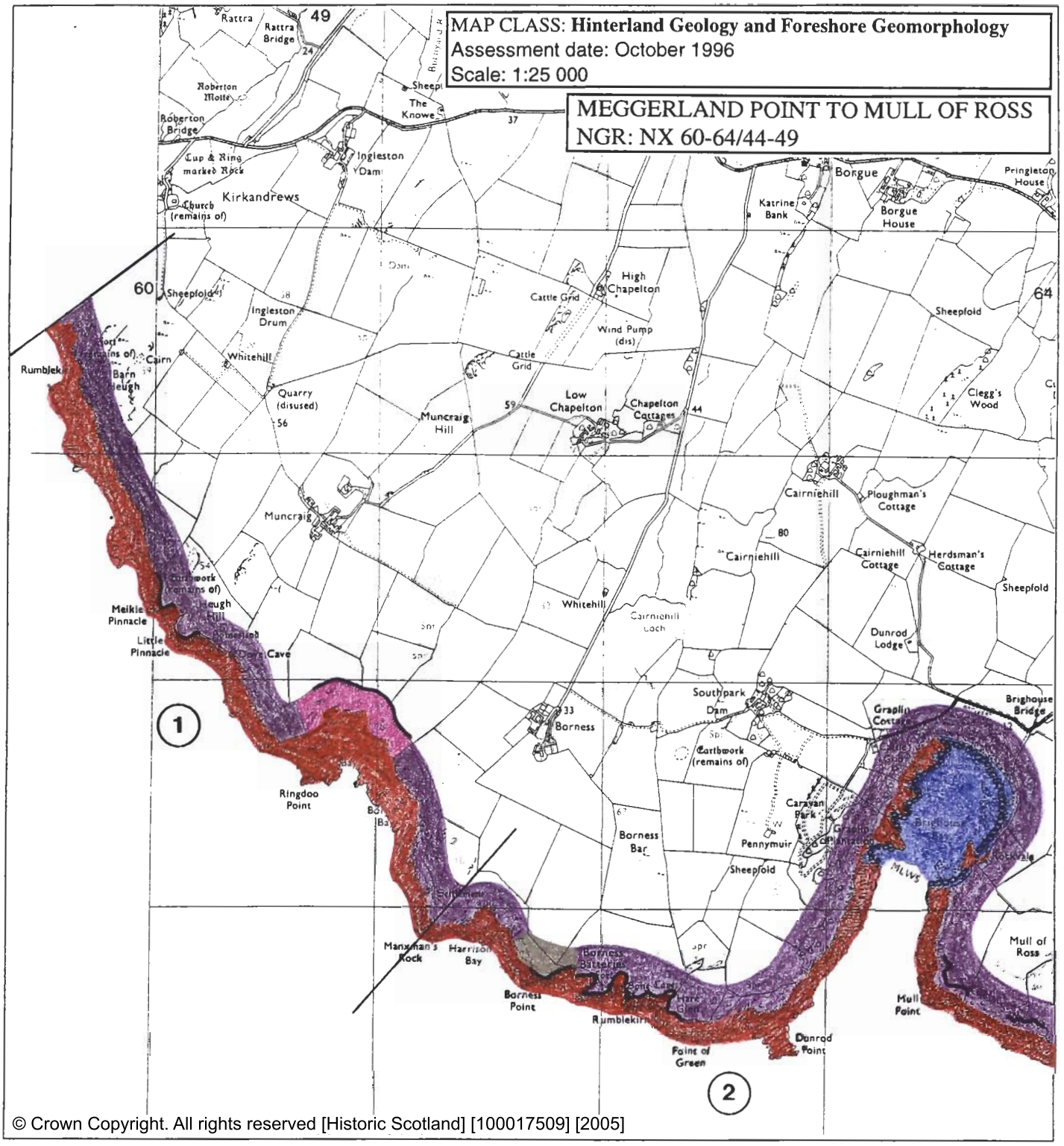
1. MEGGERLAND POINT east to
MANXMAN'S ROCKS
NX 613 450
4km
Cliff (< 10m)
Till over exposed rock
Fractured coastal edge with till overlying exposed greywackee platforms. These are deeply incised along the softer cleavage lines. Glacial sands and gravels outcrop at Ringdoo Point (NX 609459).

2. MANXMAN'S ROCKS to FAULDBOG BAY
NX 685 445
5km
Cliff (< 10m)
Till and drift deposits over exposed rock
This is an exposed irregular coast including Brighouse Bay (NX 635455). The cliff-edge is fractured and incised. Greywackee platforms are exposed throughout this unit. Brighouse bay is exposed at low water and consists of mainly sand and shingle up to the MHWM.

MAP CLASS: **Hinterland Geology and Foreshore Geomorphology**
Assessment date: October 1996
Scale: 1:25 000

MEGGERLAND POINT TO MULL OF ROSS
NGR: NX 60-64/44-49



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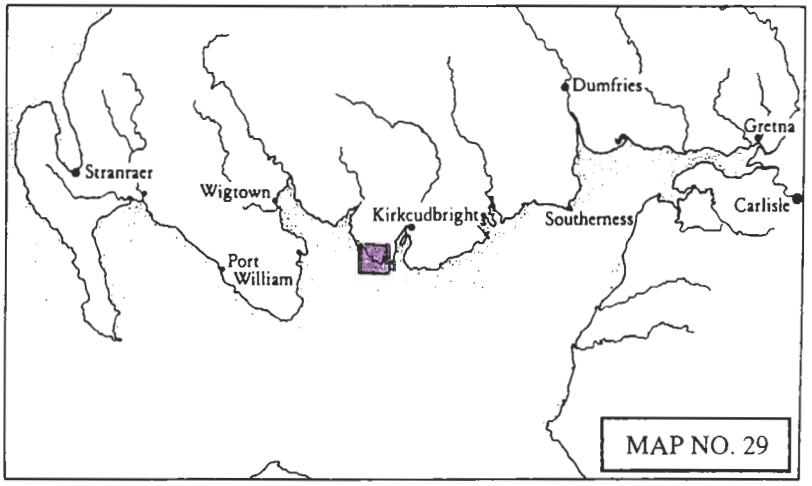
KEY

Hinterland Geology	Derwent Code	Colour
Drift, boulder clay	French Grey	
Drift, boulder clay over visible rock	Dark Violet	
Raised beach and marine deposits	Golden Brown	
Blown sand	Pink Madder Lake	
Glacial sand and gravel	Magenta	
Alluvium	Emerald Green	
Coastal Geomorphology		
Mainly rock platform	Deep vermilion	
Mainly sand	Ultramarine	
Mainly alluvial/marine mud	Venetian Red	
Marsh	May Green	
Coast Edge		
Low edge (<5m)	Thin black line	
Cliff (>5m)	Solid black line	
Man made barrier	Black line with spines	
Shingle beach	Small circles	000000
Human disturbance	Black carats	^^^^^^^



MAP 29: EROSION

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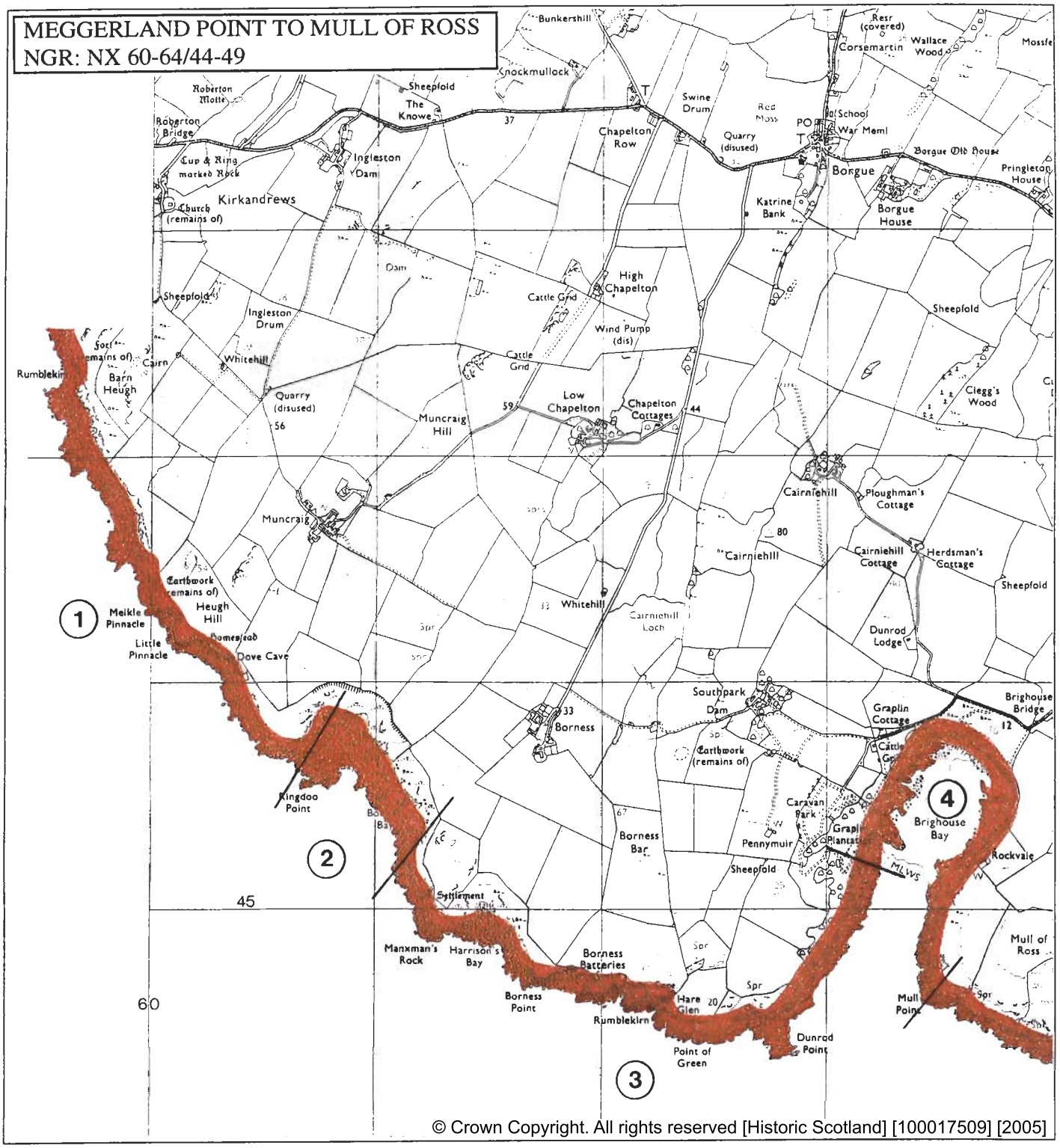
1. MEGGERLAND POINT to RINGDOO POINT
NX 605 460
2km
Definitely eroding
This unit has a highly irregular cliff-edge cut by wave action into numerous gullies. The bedding planes within the Greywackee cliffs are more susceptible to erosion by wave action and basal scouring. Cliff retreat is evident but considered to be slow.

2. RINGDOO POINT to north of MANXMAN'S ROCK
NX 610 456
0.6km
Definitely eroding
This unit includes Ringdoo Bay and Borness Bay, both of which have been formed by a combination of wave action and glacial processes. The rate of cliff-edge erosion is hard to determine but it is considered to be slow owing to the resilient nature of the Greywackee geology.

3. North of MANXMAN'S ROCK to GRAPLIN PLANTATION
NX 625 444
2.8km
Definitely eroding
This unit has an irregular cliff-edge which is deeply incised into numerous gullies. Wave cut platforms and stacks occur at the promontory headland at Dunrod Point (NX 628446) and into Brighouse Bay where the cliffs show a greater tendency for folding. Although this unit is definitely eroding it is envisaged to be occurring at a very slow rate.

4. BRIGHOUSE BAY to MULL POINT
NX 635 456
2km
Definitely eroding
This unit consists of Brighouse Bay which is exposed to the fetch of south westerly gales. The surrounding shoreline is rocky with a wide intertidal area. The foreshore consists of sand and pebbles that are eroding out from the hinterland at the MHWM.

MEGGERLAND POINT TO MULL OF ROSS
NGR: NX 60-64/44-49



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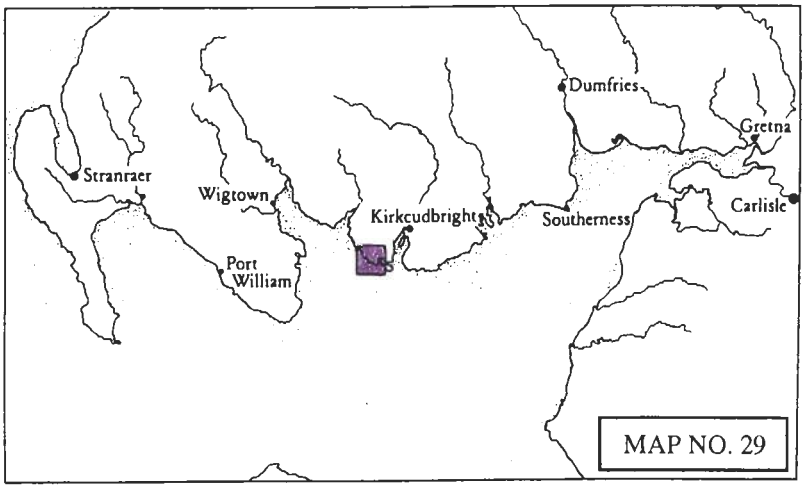
KEY

Erosion class	Derwent Code	Colour
Definitely accreting	Prussian Blue	
Accreting/stable	Light Blue	
Stable	Grass Green	
Stable/eroding	Deep Chrome	
Definitely eroding	Deep Vermilion	
Both accreting and eroding	Imperial Purple	
No access	Blank	
Land below 10m	Straw Yellow	

MAP CLASS: **EROSION**
Assessment date: 03.10.96
Scale 1:25 000



MAP 29: BUILT HERITAGE AND ARCHAEOLOGY

Sites on the Coast Edge & Foreshore

NX64NW 7
NX 6028 4615
MUNCRAIG HEUGH
Homestead / Fort
Scheduled Ancient Monument
1st Mill BC/AD
Fair
Survey & Monitor

NX64SW 3
NX 6128 4498
MANXMAN'S ROCK
Settlement
1st Mill BC/AD
Fair
Survey & Monitor

NX64SW 2
NX 6198 4466
BORNESS BATTERIES
Promontory Fort
Scheduled Ancient Monument
1st Mill BC/AD
Fair
Survey & Monitor

NX64SW 1
NX 6208 4466
BONE CAVE, BORNESS
Cave
2nd Century AD
Uncertain; not located
Monitor

NX 6270 4455
DUNROD POINT
Possible Enclosure
Uncertain
Uncertain; not visited
Monitor

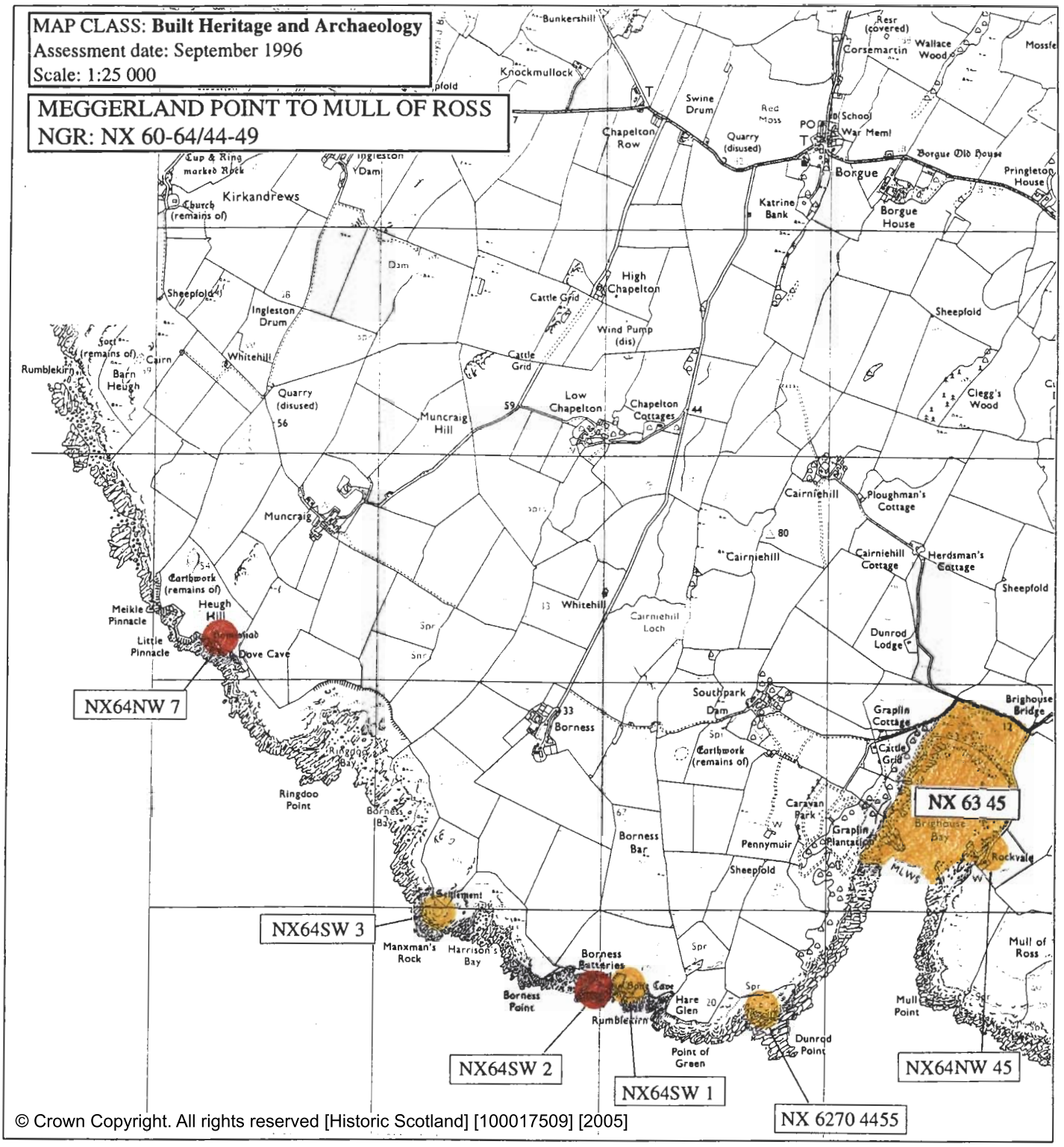
NX 63 45
BRIGHOUSE BAY
Romano-British Settlement
2nd-3rd centuries AD
Fair
Monitor

Sites in the Hinterland

NX64NW 45
NX 6370 4530
ROCKVALE, BRIGHOUSE BAY
Quay
Uncertain
Good
Nil

MAP CLASS: **Built Heritage and Archaeology**
Assessment date: September 1996
Scale: 1:25 000

MEGGERLAND POINT TO MULL OF ROSS
NGR: NX 60-64/44-49



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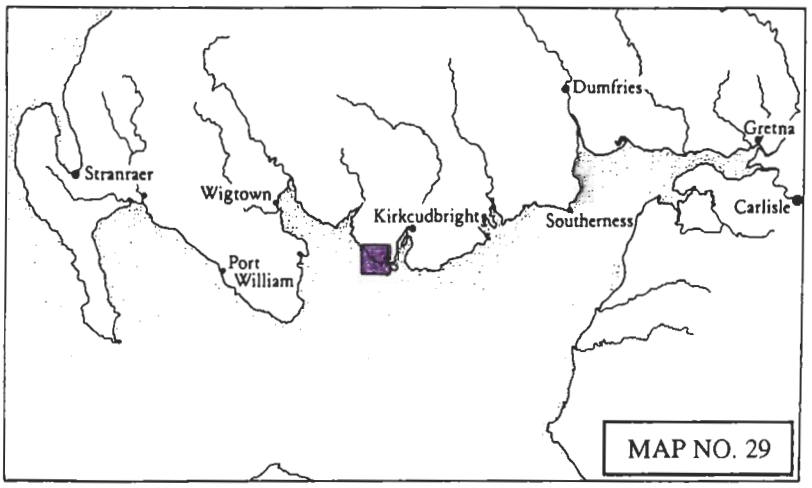
KEY

Site location	Symbol	Colour	Significance
	Roundel - Solid, (or area)	Red	Protected Ancient Monument
NGR ref. - eg.	Cross	Red	Listed Historic Building
NX 143 368	Roundel - Open, (or area)	Red	Monument formally proposed by Historic Scotland for designation
	Roundel - Solid, (or area)	Yellow	Other known Ancient Monument
NMRS ref. - eg.	Dashed outline	Yellow	Gardens/Designed landscape
NX13 SW17	Roundel - Solid, (or area)	Yellow	Undesignated wreck
	Area	Green	Insufficient information; more work needed
	Area	Blue	Probably archaeologically sterile



MAP 30: DUNROD POINT TO SENWICK WOOD

Hinterland Geology and Coastal Geomorphology: Between Faulbog Bay and Ross Bay an isthmus forms a narrow neck of land leading to the promontory headland of Meikle Ross which stands at 90m O.D. The coastline north of Gallant Buoys is irregular with a high cliff-edge. Much of this region is covered with till over exposed rock. Morainic drift outcrops over rock cliffs at Slack Heugh Bay (see Unit 2). The head of Ross Bay has glacial sands and gravels, and marine sands. From Gallant Bouys onwards the cliffs are covered with till.

Erosion Class: From Dunrod Point to Blackstone the exposed coastal edge is considered to be definitely eroding. Cliff retreat has exposed wide greywackee platforms. Within Ross Bay sand is accreting owing to its fairly sheltered position. The head of the bay is stable as shingle and sand are banked up at the current HWMS. The northern side of the bay and further north from Gallant Buoys the coast forms the middle estuary of Kirkudbright Bay and is more sheltered than in the region of the promontory. As a result of its more sheltered easterly aspect this region of the coast is classified as eroding or stable.

Built Heritage & Archaeology: All sites in this section are located in the hinterland of the coast and are therefore not susceptible to coastal erosion. They include a lighthouse, the remains of a church and graveyard, a shieling and cord rig agriculture. Monitoring is not deemed necessary.

Map 30: Hinterland Geology and Coastal Geomorphology

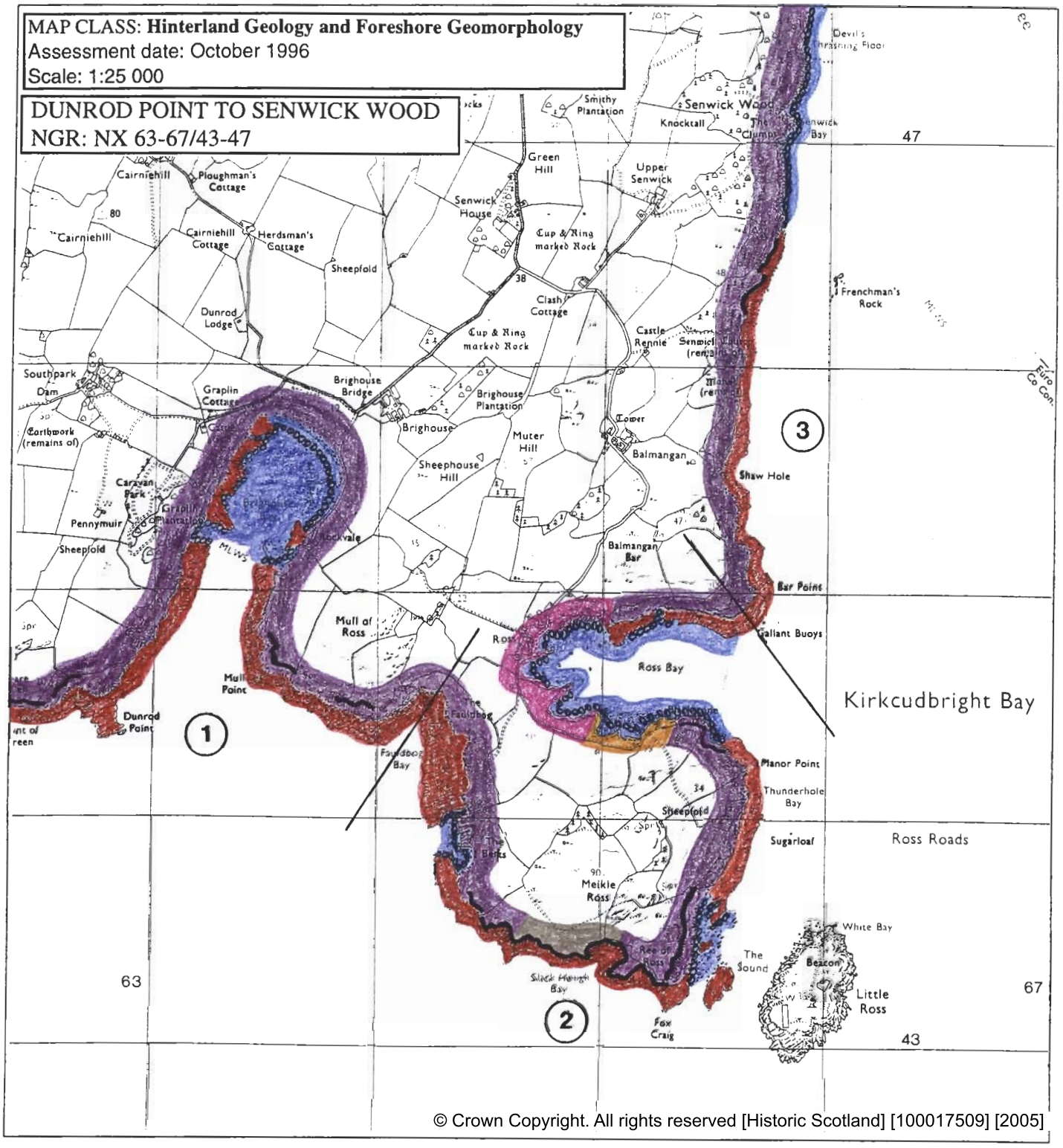
1. MANXMAN'S ROCKS to FAULDBOG BAY
NX 685 445
5km
Cliff (< 10m)
Till and drift deposits over exposed rock
This is an exposed irregular coast including Brighouse Bay (NX 635455). The cliff-edge is fractured and incised. Greywackee platforms are exposed throughout this unit. Brighouse bay is exposed at low water and consists of mainly sand and shingle up to the MHWM.

2. FOULDBOG BAY to GALLANT BUOYS
NX 646 434
5km
Cliff (>10m)
Till over exposed rock
This unit consists of the Meikle Ross which is an exposed promontory headland at the mouth of Kirkudbright Bay. The cliff-edge is irregular and gullies have been formed between softer cleavage joints within the greywackee platforms. Ross Bay has outcropping glacial sands and gravels at its head. The foreshore in the bay is mainly sand with outcropping rock.

3. GALLANT BUOYS north to NUN MILL BAY
NX 658 466
5m
Cliff (< 10m)
Till over visible rock
Middle estuary of Kirkudbright Bay. The coastal edge is fractured and overlain by till. In the south greywackee outcrops on the foreshore. Towards Nun Mill Bay wide tidal sand flats bounded by a beach with poorly sorted boulders and shingle.

MAP CLASS: **Hinterland Geology and Foreshore Geomorphology**
Assessment date: October 1996
Scale: 1:25 000

DUNROD POINT TO SENWICK WOOD
NGR: NX 63-67/43-47



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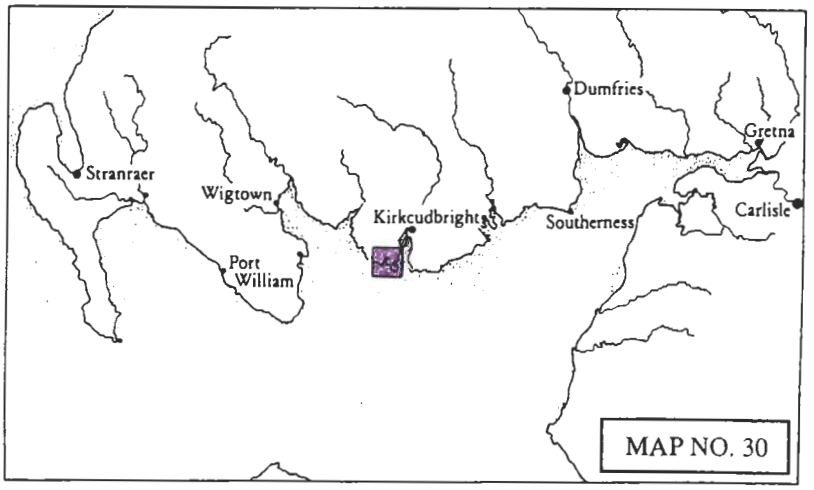
KEY

Hinterland Geology	Derwent Code	Colour
Drift, boulder clay	French Grey	
Drift, boulder clay over visible rock	Dark Violet	
Raised beach and marine deposits	Golden Brown	
Blown sand	Pink Madder Lake	
Glacial sand and gravel	Magenta	
Alluvium	Emerald Green	
Coastal Geomorphology		
Mainly rock platform	Deep vermilion	
Mainly sand	Ultramarine	
Mainly alluvial/marine mud	Venetian Red	
Marsh	May Green	
Coast Edge		
Low edge (<5m)	Thin black line	
Cliff (>5m)	Solid black line	
Man made barrier	Black line with spines	
Shingle beach	Small circles	oooooo
Human disturbance	Black carats	^^^^^^



MAP 30: EROSION

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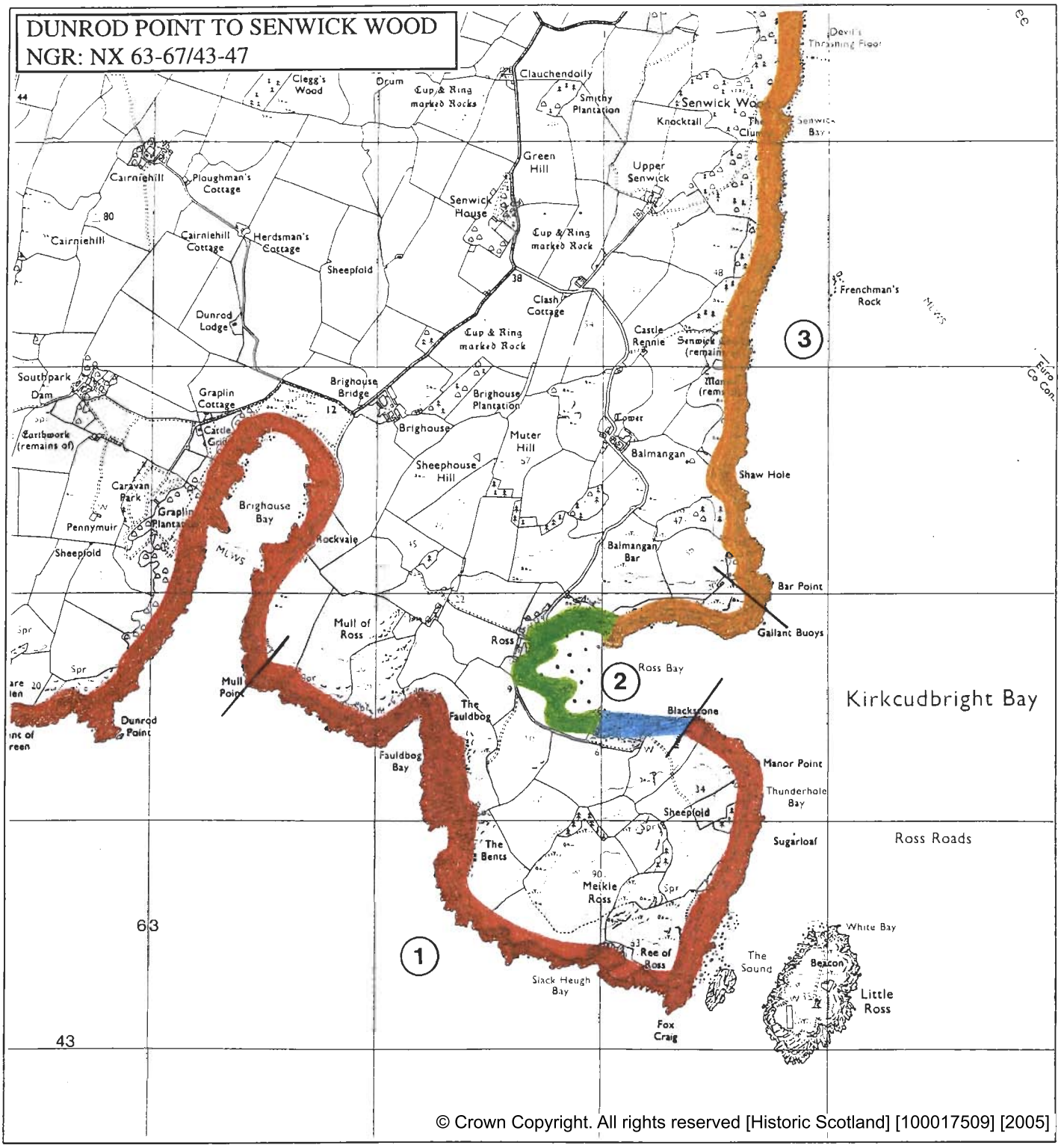
1. MULL POINT to BLACKSTONE
NX 654 432
4.9km
Definitely eroding
This region of coastline is extremely exposed from Mull Point to Fox Craig (NX 650433). The cliff edge is incised with numerous gullies and exposed rock platform. The promontory headland has precipitous cliffs that are open to south westerly gales. Wave action is high and erosion is considered to be slow to moderate owing to the resilience of the Wenlock Series Greywackees.

2. BLACKSTONE to GALLANT BOUYS
NX 647 447
1.6km
Stable and eroding or stable
This unit comprises Ross Bay which is sheltered from extreme weather. The head of the bay is stable with saltmarsh vegetation. The northern shore of the bay is rocky which appears to be stable.

3. GALLANT BOUYS to NUN MILL BAY
NX 658 470
3.5km
Eroding or stable
Moderately incised low cliff-edge characterise this unit. At Shaw Hole the cliffs are scoured into narrow gullies. Further north the intertidal zone becomes much wider with mainly sand and poorly sorted boulders. Erosion is considered to be minimal along this stretch of coast due to its sheltered position.

DUNROD POINT TO SENWICK WOOD
NGR: NX 63-67/43-47



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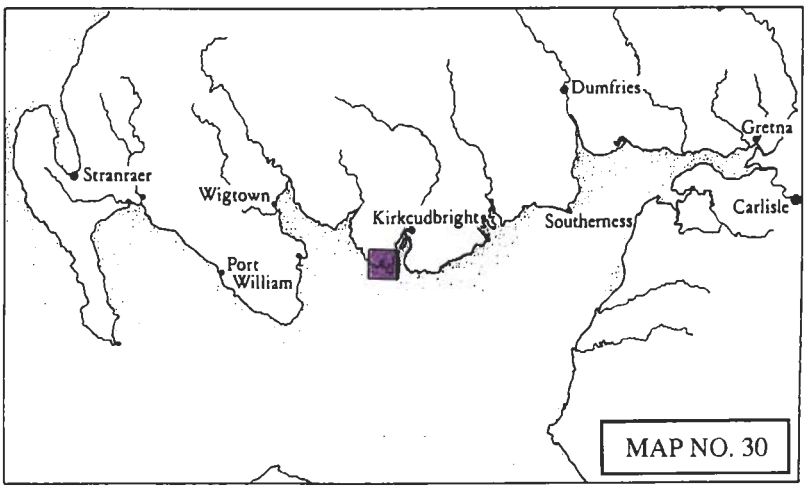
KEY

Erosion class	Derwent Code	Colour
Definitely accreting	Prussian Blue	
Accreting/stable	Light Blue	
Stable	Grass Green	
Stable/eroding	Deep Chrome	
Definitely eroding	Deep Vermilion	
Both accreting and eroding	Imperial Purple	
No access	Blank	
Land below 10m	Straw Yellow	

MAP CLASS: **EROSION**
Assessment date: 03.10.96
Scale 1:25 000



MAP 30: BUILT HERITAGE AND ARCHAEOLOGY

Sites on the Coast Edge & Foreshore

None

Sites in the Hinterland

NX 6445 4438
THE FAULDBOG
Shieling / Enclosure
Uncertain
Good
Nil

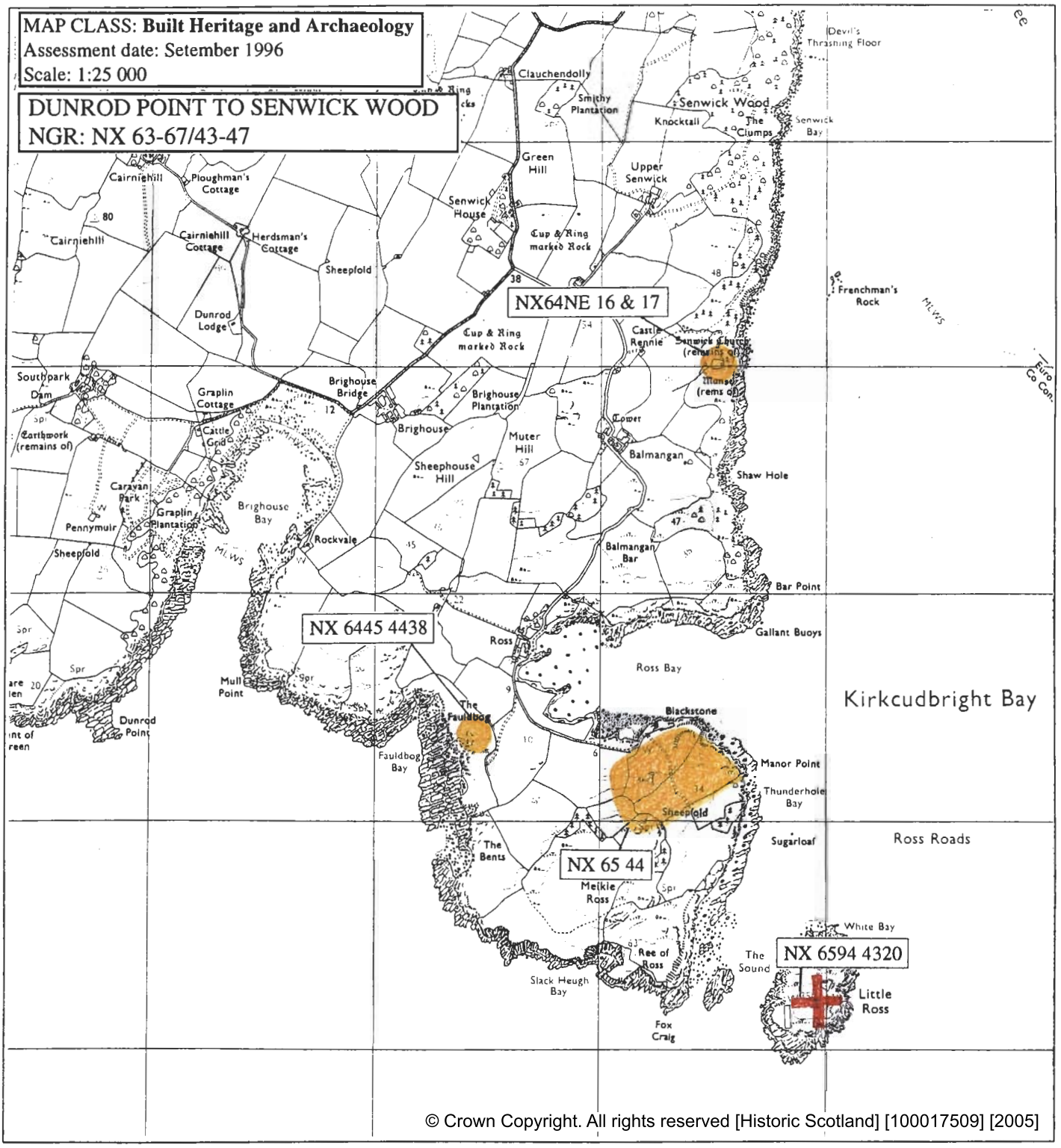
NX 6594 4320
LITTLE ROSS
Lighthouse
Statutory Listed Building
19th century
Uncertain; not visited
Nil

NX 65 44
MEIKLE ROSS
Cord Rig Agriculture
Uncertain
Uncertain; not visited
Nil

NX64NE 16 & 17
NX 6550 4600
SENWICK
Church, Graveyard & Manse
14th century - 17th century
Good
Nil

MAP CLASS: **Built Heritage and Archaeology**
Assessment date: Setember 1996
Scale: 1:25 000

DUNROD POINT TO SENWICK WOOD
NGR: NX 63-67/43-47



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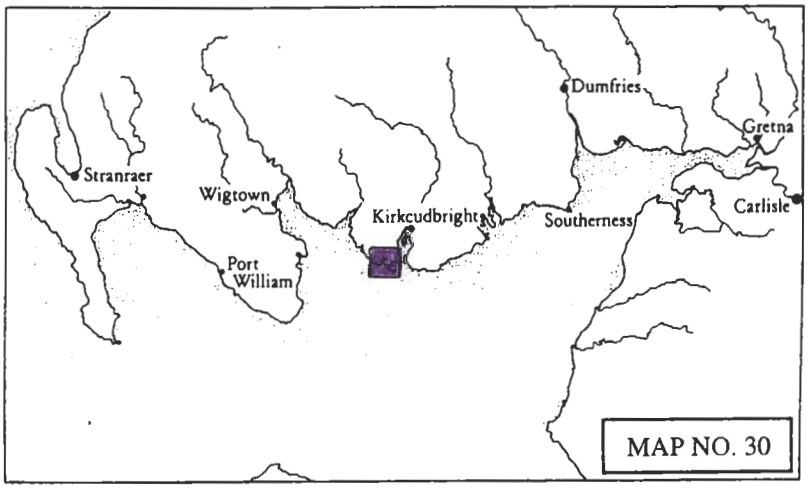
KEY

Site location	Symbol	Colour	Significance
	Roundel - Solid, (or area)	Red	Protected Ancient Monument
NGR ref. - eg.	Cross	Red	Listed Historic Building
NX 143 368	Roundel - Open, (or area)	Red	Monument formally proposed by Historic Scotland for designation
	Roundel - Solid, (or area)	Yellow	Other known Ancient Monument
NMRS ref. - eg.	Dashed outline	Yellow	Gardens/Designed landscape
NX13 SW17	Roundel - Solid, (or area)	Yellow	Undesignated wreck
	Area	Green	Insufficient information; more work needed
	Area	Blue	Probably archaeologically sterile



MAP 31: BAR POINT TO BATHINGHOUSE BAY

Hinterland Geology and Coastal Geomorphology: This section of the coast forms the greater part of Kirkudbright Bay. The coastal edge is much lower than in the preceding coastal mapping section. Till covers the cliff-edge from Bar Point northwards. Marine sand and gravels occur at Nun bay. North of this area, till continues. St Mary's Isle forms a peninsula consisting of both till and on the east side, marine deposits. Manxmans's Lake is a wide bay with a hinterland comprising raised beach deposits and till. From Mutehill the coastline is irregular with marine sands, till and Devensian drift south to Halftide Rock (NX674450). On the western side of Kirkudbright Bay, the shoreline is generally rocky interspersed with long stretches of sand and shingle. The foreshore within Manxmans's Lake is colonised by salt-marsh. The eastern side of the bay and southwards towards Cutters Pool overlooks wide tidal mud flats.

Erosion Class: The western shoreline flanking Kirkudbright Bay is classified as stable or eroding. Erosion is occurring at Nun Bay (private sea defences have been damaged) and Jocks Bay (NX 662489). From this location the coastline is considered to be accreting or stable. St Mary's Isle is prone to erosion. The head of Manxman's lake shows evidence of stability due to the presence of salt-marsh. A river channel has scoured a region of industrial land at Mutehill Bridge. The coast line south of this location is effected by active erosion due to the long tidal fetch up the bay. To the south the rocky shoreline has a south westerly aspect and is being slowly eroded.

Built Heritage & Archaeology: This section contains a scattered distribution of sites on the edges of Kirkcudbright Bay, including a fish trap, shipwreck, boat noost and slipway, all probably of relatively recent date. Also surviving, at the eastern edge of the bay, on the shingle beach, are two hammerstone findspots; one found before 1930 and the other during the CFA field survey. The casual discovery of a hammerstone in the survey suggests that more may survive on the shore near The Lake House. Although the coastline is generally stable the unpredictable nature of movement of the shingle beach at the findspots obliges a field-walking survey and monitoring programme.

Map 31: Hinterland Geology and Coastal Geomorphology

1. GALLANT BUOYS north to NUN MILL BAY
NX 658 466
5m
Cliff (< 10m)
Till over visible rock
Middle estuary of Kirkudbright Bay. The coastal edge is fractured and overlain by till. In the south greywackee outcrops on the foreshore. Towards Nun Mill Bay wide tidal sand flats bounded by a beach with poorly sorted boulders and shingle.

2. NUN MILL BAY to GIBBHILL POINT
NX 667 499
3km
Low cliff (< 10m)
Till over visible rock
Lower tidal reach of the River Dee with wide low lying mud flats. Alluvial sands and fine mud alongside saltmarsh which bounds the deep river channel. The hinterland consists of till overlying outcropping rock platform.

3. GIBHILL POINT to STABLES COTTAGE via KIRKUDBRIGHT BRIDGE
NX 670 510
5km
Low edge (< 5m)
Marine sands and gravels
This unit includes the tidal reach of the River Dee where the hinterland is marine sands and gravels. Alluvial mud is present and formed by suspended sediments brought down the river and from outside the estuary. Saltmarsh is dissected by drainage channel at Great Cross (NX 675500).

4. STABLES COTTAGES to north of MONKS WELL
NX 670 483
2.5km
Till and marine deposits over visible rock
The promontory of St Marys Isle. The cliff-edge is very irregular and covered on the eastern side with till. On the west side the soil cover is marine sands and gravels. These soils overlay outcropping greywackee platforms that shelve steeply to meet low sand flats. Poorly sorted boulders intermixed with sand occurs on the west side of the peninsula.

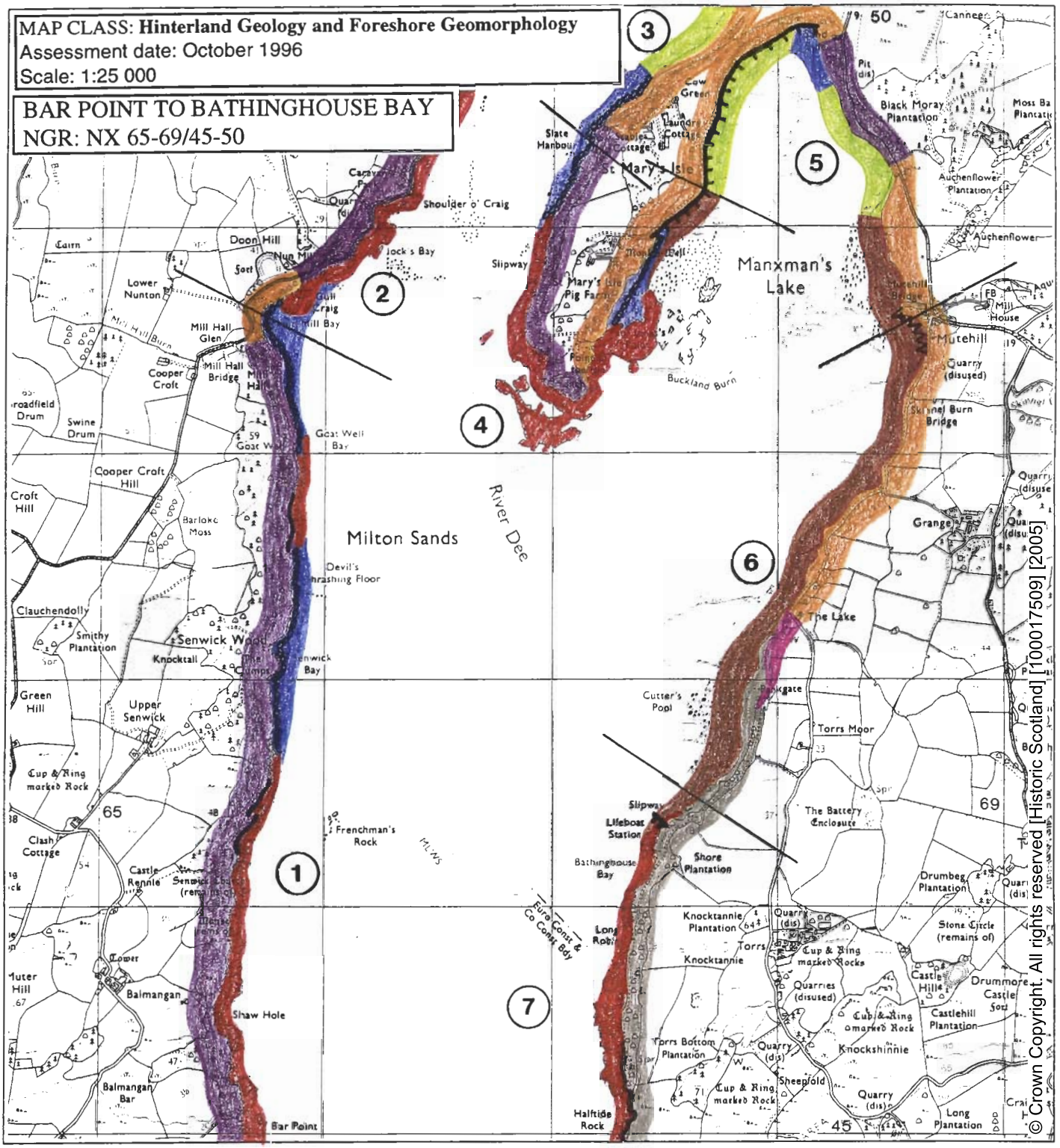
5. NORTH OF MONKS WELL TO MUTE HILL
NX 680 499
2.5km
Low edge (<10m)
Marine sands and gravel and till
The head of Manxmans's Lake is a small tidal bay of low sand flats with migrating channels. Vegetated gravel and salt-marsh is present at the HWM. Small boulders intermixed with course sand occurs along the foreshore is common at Mutehill Bridge (NX 686486).

6. MUTEHILL BRIDGE to north of SHORE PLANTATION
NX 680 474
2.4km
Low edge (< 5m)
Marine sands and gravels
Low tidal sand flats with a foreshore consisting of poorly sorted boulders intermixed with estuarine mud. The hinterland geology consists of marine sands and gravels.

7. North of SHORE PLANTATION to PORT MUDDLE
NX 673 450
4km Cliff (< 10m)
Glacial drift and till over rock
This unit has a very irregular cliff-edge that becomes deeply incised towards the south. Rock platforms occur the length of this unit. Glacial drift contain facies of brecciated clay and greywackee. From Torrs Point the overlying hinterland geology is till .

MAP CLASS: **Hinterland Geology and Foreshore Geomorphology**
Assessment date: October 1996
Scale: 1:25 000

BAR POINT TO BATHINGHOUSE BAY
NGR: NX 65-69/45-50



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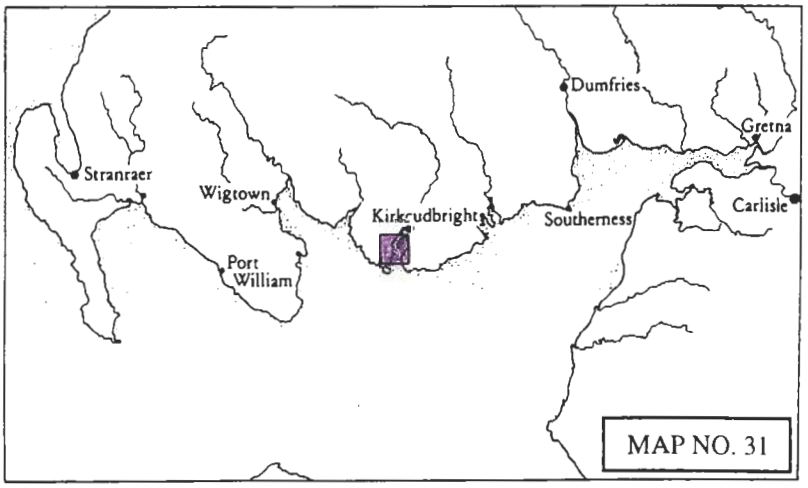
KEY

Hinterland Geology	Derwent Code	Colour
Drift, boulder clay	French Grey	
Drift, boulder clay over visible rock	Dark Violet	
Raised beach and marine deposits	Golden Brown	
Blown sand	Pink Madder Lake	
Glacial sand and gravel	Magenta	
Alluvium	Emerald Green	
Coastal Geomorphology		
Mainly rock platform	Deep vermilion	
Mainly sand	Ultramarine	
Mainly alluvial/marine mud	Venetian Red	
Marsh	May Green	
Coast Edge		
Low edge (<5m)	Thin black line	
Cliff (>5m)	Solid black line	
Man made barrier	Black line with spines	
Shingle beach	Small circles	ooooooo
Human disturbance	Black carats	^^^^^^^



MAP 31: EROSION

1. GALLANT BOUYS to NUN MILL BAY
NX 658 470
3.5km
Eroding or stable
Moderately incised low cliff-edge characterise this unit. At Shaw Hole the cliffs are scoured into narrow gullies. Further north the intertidal zone becomes much wider with mainly sand and poorly sorted boulders. Erosion is considered to be minimal along this stretch of coast due to its sheltered position.

2. NUNMILL BAY to SHOULDER O'CRAIG
NX 657 487
0.9km
Definitely eroding/eroding or stable
This unit includes Nun Mill Bay and the fractured rocky cliff-edge at Jocks Bay (NX 662 489) At Nun Mill Bay a private sea wall at the MHWM has collapsed and the soft clay behind is eroding out. Wall fabric is strewn about the foreshore.

3. SHOULDER O'CRAIG to KIRKCUDBRIGHT BRIDGE
NX 674 510
3km
Accreting or stable
This unit includes the lower tidal reach of the River Dee. The shoreline is dominated by saltmarsh and mud flats. The river banks in the region of Castledykes Point (NX 678 512) are accreting with mud due to the high sediment load brought down the River Dee.

4. KIRKUDBRIGHT BRIDGE to south of SLATE HARBOUR
NX 678 500
3.5km
Accreting or stable
This unit consists of a regular shoreline with a low lying foreshore dominated by mud and boulders. The high sediment load from the River Dee are leading to accretion on this section of the coast.

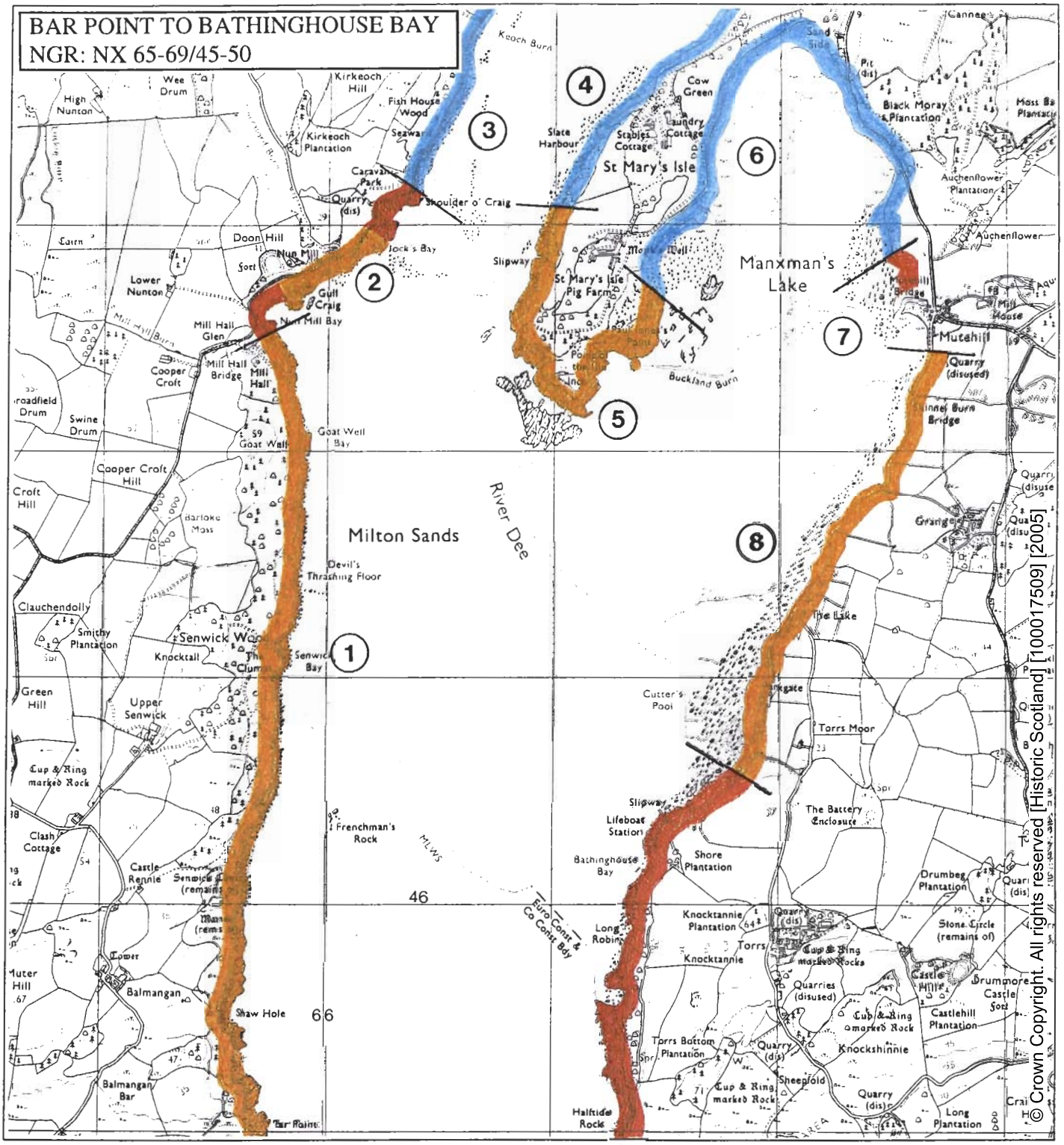
5. SLATE HARBOUR to north of PAUL JONES POINT
NX 672 484
1.4km
Eroding or stable
Exposed promontory headland which has been deeply incised by wave action. Rock platforms outcrop from the headland and slump material is abrading within the gullies. The speed at which the cliff-edge is retreating is hard to predict but it is considered to be slow owing to the fairly resilient nature of the underlying geology.

6. North of PAUL JONES POINT to MUTE-HILL BRIDGE
NX 678 489
2.3km
Accreting or stable
This unit is the whole of Manxman's Lake which consists of a large sheltered bay. The shoreline is consolidated by saltmarsh. The foreshore is mainly sand and mud with boulders occurring towards Mutehill Bridge.

7. MUTEHILL BRIDGE to MUTEHILL
NX 685 488
0.4km
Definitely eroding
This unit consists of a disused quarry processing site surrounded by rubble sea defences. The sea wall is now severely eroded by a river channel and also eroded in other parts at the MHWM. Concrete and other domestic refuse litters the foreshore.

8. MUTEHILL to south of TORRS MOOR
NX 680 474
2km
Eroding or stable
This unit comprises the western shore of Kirkudbright Bay. The intertidal area is wide with poorly sorted boulders and sandy spits. Shingle is banking up at the MHWM in parts suggesting that the shoreline is stable at the present.

BAR POINT TO BATHINGHOUSE BAY
NGR: NX 65-69/45-50



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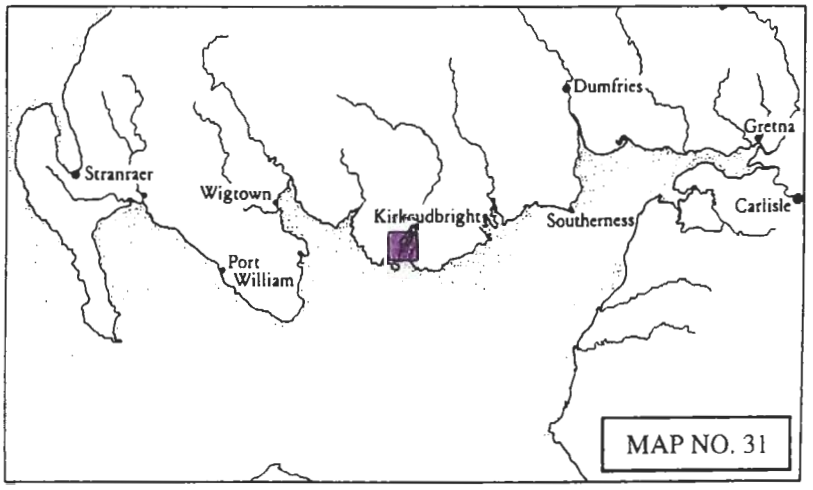
KEY

Erosion class	Derwent Code	Colour
Definitely accreting	Prussian Blue	
Accreting/stable	Light Blue	
Stable	Grass Green	
Stable/eroding	Deep Chrome	
Definitely eroding	Deep Vermilion	
Both accreting and eroding	Imperial Purple	
No access	Blank	
Land below 10m	Straw Yellow	

MAP CLASS: **EROSION**
Assessment date: 04.10.96
Scale 1:25 000



MAP 31: BUILT HERITAGE AND ARCHAEOLOGY

Sites on the Coast Edge & Foreshore

NX 6589 4811
NUN MILL BAY
Fish Trap
Uncertain
Poor
Survey & Monitor

NX64NE 8041
NX 6591 4833
NUN MILL BAY
Shipwreck
Uncertain
Poor
Survey & Monitor

NX64NE 41
NX 672 494
SLATE HARBOUR
Boat Noost
Uncertain
Fair
Monitor

NX 6690 4884
ST MARY'S ISLE
Slipway
Uncertain
Poor
Monitor

NX 6812 4752
THE LAKE, KIRKCUDBRIGHT BAY
Hammerstone Findspot
3rd/2nd Mill BC
Fair
Survey & Monitor

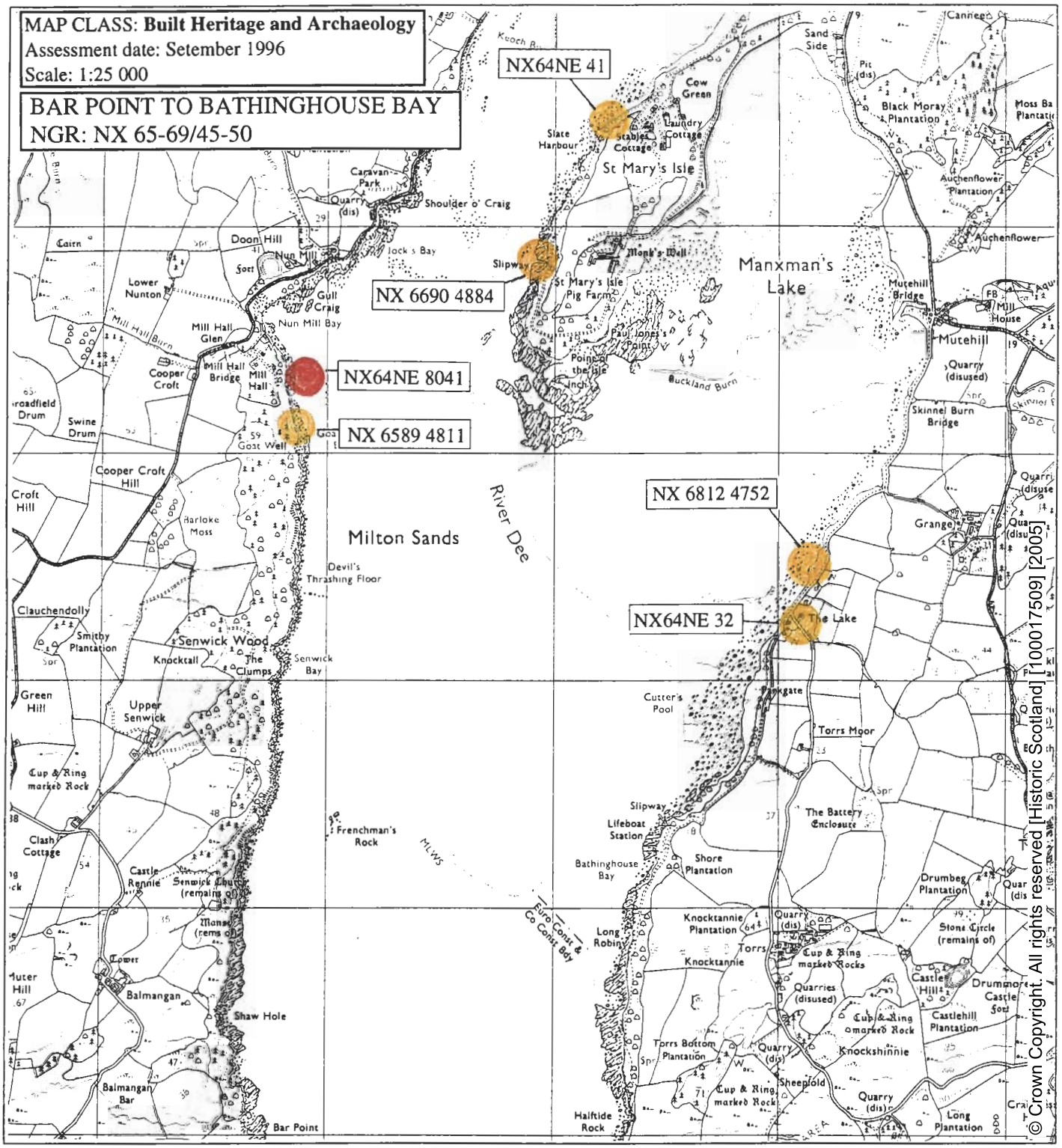
NX64NE 32
NX 681 472
THE LAKE, KIRKCUDBRIGHT BAY
Hammerstone Findspot
3rd/2nd Mill BC
Fair
Survey & Monitor

Sites in the Hinterland

None

MAP CLASS: **Built Heritage and Archaeology**
Assessment date: Setember 1996
Scale: 1:25 000

BAR POINT TO BATHINGHOUSE BAY
NGR: NX 65-69/45-50



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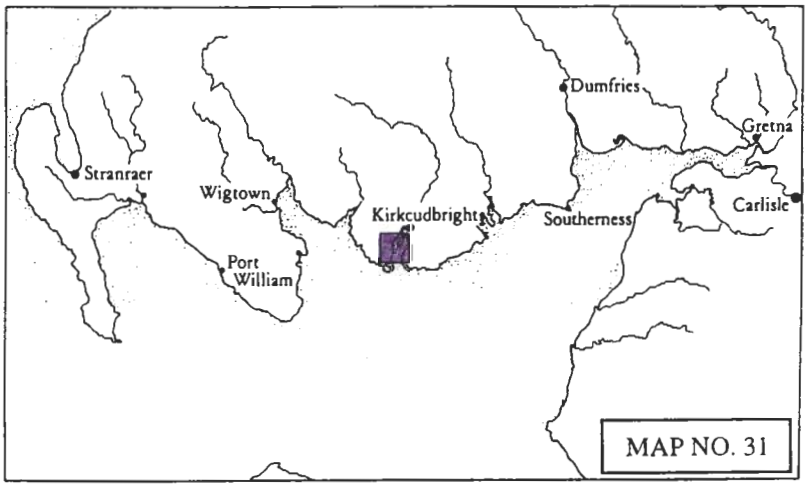
KEY

Site location	Symbol	Colour	Significance
NGR ref. - eg. NX 143 368	Roundel - Solid, (or area)	Red	Protected Ancient Monument
	Cross	Red	Listed Historic Building
	Roundel - Open, (or area)	Red	Monument formally proposed by Historic Scotland for designation
	Roundel - Solid, (or area)	Yellow	Other known Ancient Monument
NMRS ref. - eg. NX13 SW17	Dashed outline	Yellow	Gardens/Designed landscape
	Roundel - Solid, (or area)	Yellow	Undesignated wreck
	Area	Green	Insufficient information; more work needed
	Area	Blue	Probably archaeologically sterile



MAP 32: KIRKUDBRIGHT

Hinterland Geology and Coastal Geomorphology: The map shows the geomorphology alongside the lower tidal reach of the River Dee. The hinterland is dominated by marine deposits. These low shoreline overlooks a meandering river surrounded by salt-marsh and alluvium.

Erosion Class: Salt-marsh is lending stability to the edge of the River Dee and riverine silt is accreting on its banks.

Built Heritage & Archaeology: The town of Kirkcudbright dominates this section; its elements, such as Kirkcudbright Castle, the listed harbour buildings, the shipwrecks in the river Dee and the jetty at Gibbhill-Castledykes Point relate to the role of Kirkcudbright as a port; a role possibly dating from as far back as the Thirteenth century when the invading fleet of Edward 1 established a supply base there, through the eighteenth and nineteenth centuries when the port began to flourish, to the present day where the town survives as one of the few working fishing harbours in the region (Graham & Truckell, 1977, 131-133).

Map 32: Hinterland Geology and Coastal Geomorphology

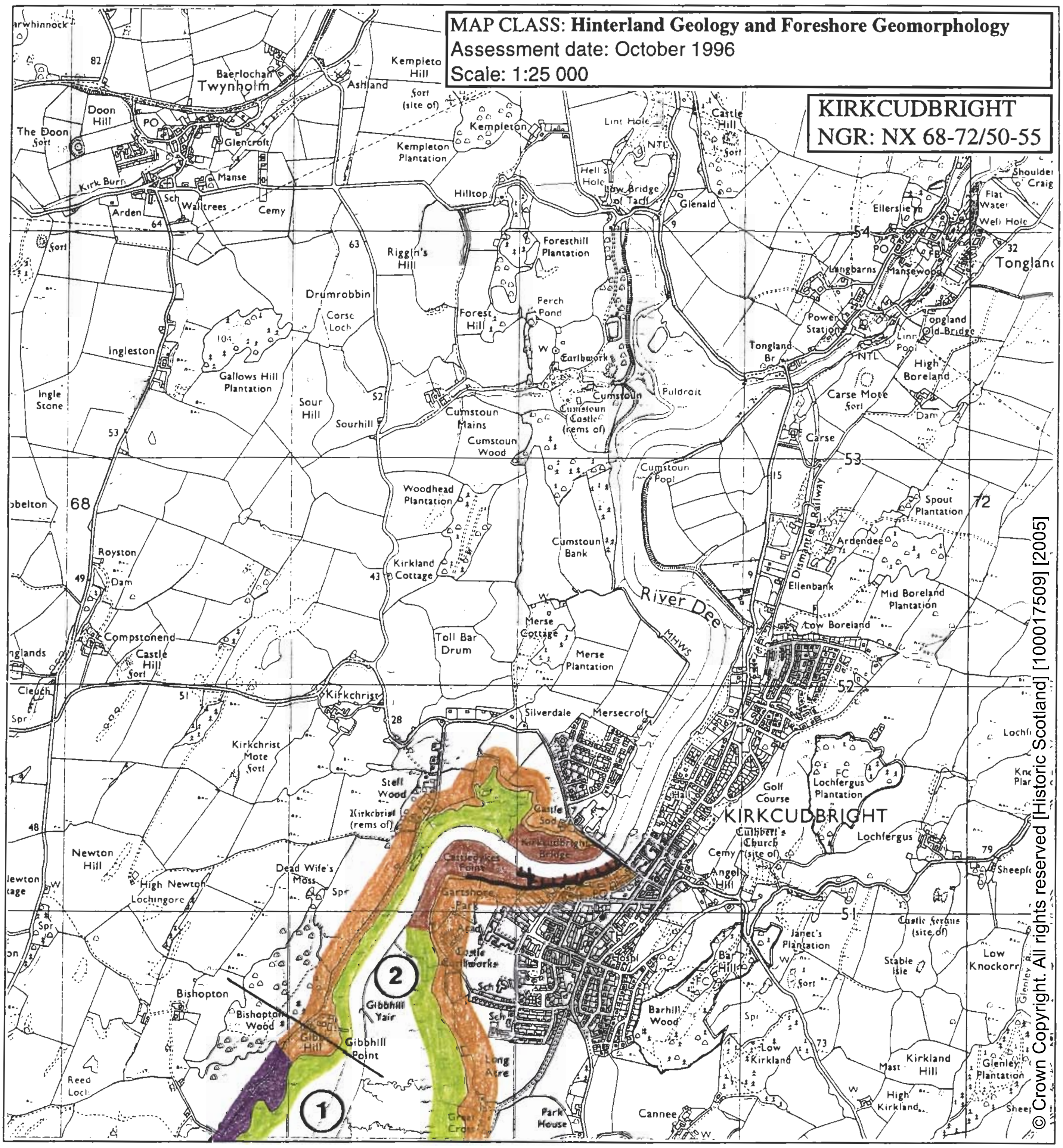
---

1. NUN MILL BAY to GIBBHILL POINT
NX 667 499
3km
Low cliff (< 10m)
Till over visible rock
Lower tidal reach of the River Dee with wide low lying mud flats. Alluvial sands and fine mud alongside saltmarsh which bounds the deep river channel. The hinterland consists of till overlying outcropping rock platform.

2. GIBHILL POINT to STABLES COTTAGE via KIRKUDBRIGHT BRIDGE
NX 670 510
5km
Low edge (< 5m)
Marine sands and gravels
This unit includes the tidal reach of the River Dee where the hinterland is marine sands and gravels. Alluvial mud is present and formed by suspended sediments brought down the river and from outside the estuary. Saltmarsh is dissected by drainage channel at Great Cross (NX 675500).

MAP CLASS: **Hinterland Geology and Foreshore Geomorphology**
Assessment date: October 1996
Scale: 1:25 000

KIRKCUDBRIGHT
NGR: NX 68-72/50-55



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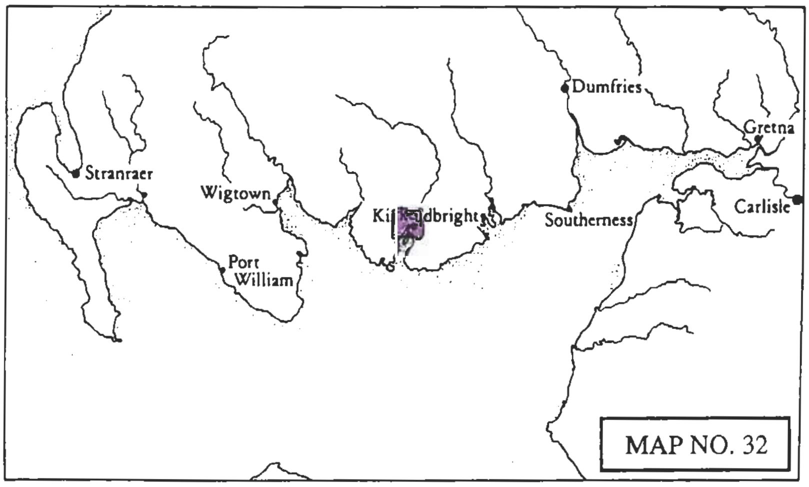
KEY

Hinterland Geology	Derwent Code	Colour
Drift, boulder clay	French Grey	▨
Drift, boulder clay over visible rock	Dark Violet	🟪
Raised beach and marine deposits	Golden Brown	🟧
Blown sand	Pink Madder Lake	🟥
Glacial sand and gravel	Magenta	🟪
Alluvium	Emerald Green	🟩
Coastal Geomorphology		
Mainly rock platform	Deep vermilion	🟥
Mainly sand	Ultramarine	🟦
Mainly alluvial/marine mud	Venetian Red	🟫
Marsh	May Green	🟨
Coast Edge		
Low edge (<5m)	Thin black line	——
Cliff (>5m)	Solid black line	━━
Man made barrier	Black line with spines	┬┬┬┬┬
Shingle beach	Small circles	oooooo
Human disturbance	Black carats	^^^^^^^



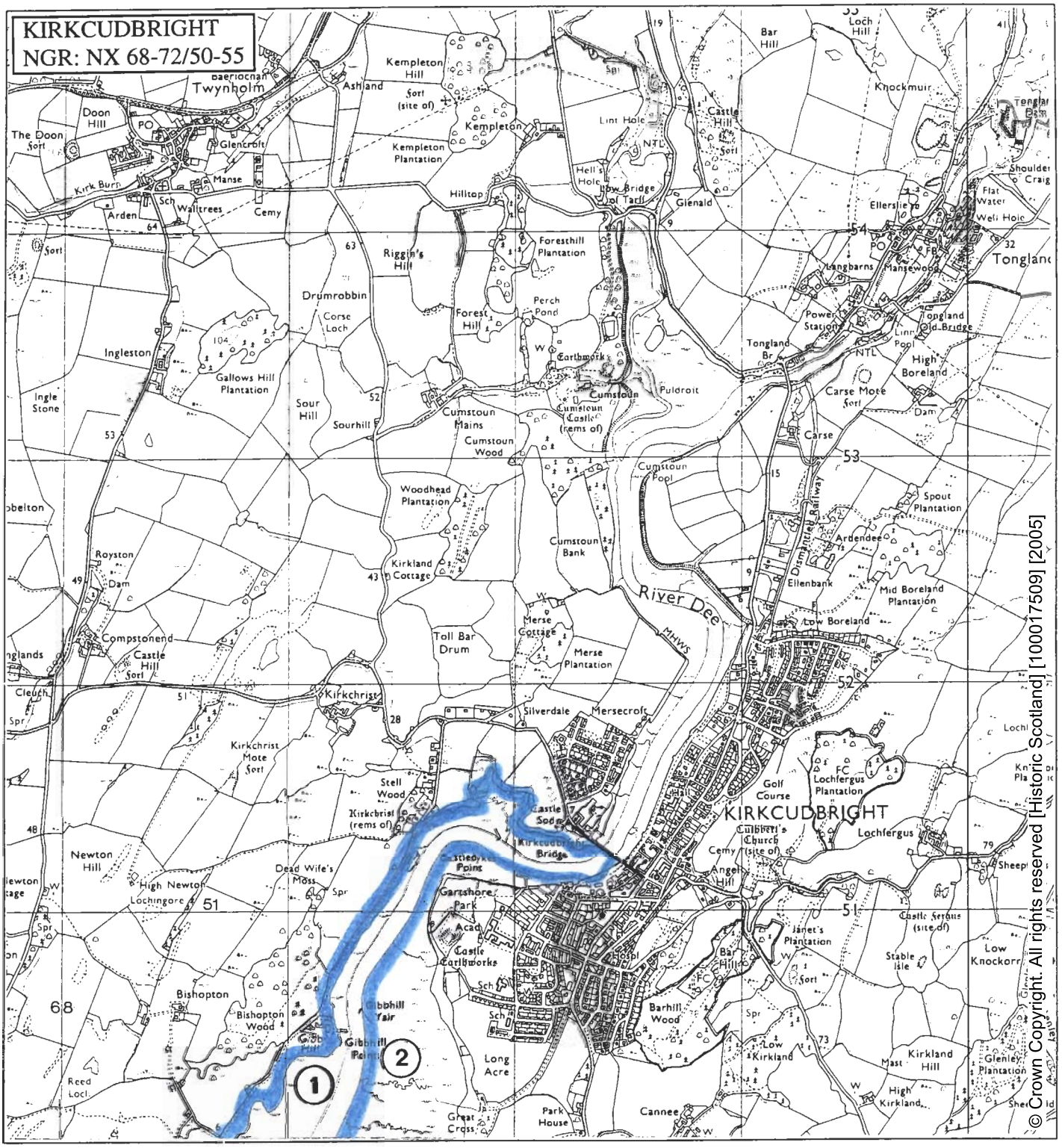
MAP NO. 32

MAP 32: EROSION

---

1. SHOULDER O'CRAIG to
KIRKCUDBRIGHT BRIDGE
NX 674 510
3km
Accreting or stable
This unit includes the lower tidal reach of the River Dee. The shoreline is dominated by saltmarsh and mud flats. The river banks in the region of Castledykes Point (NX 678 512) are accreting with mud due to the high sediment load brought down the River Dee.

2. KIRKUDBRIGHT BRIDGE to south of
SLATE HARBOUR
NX 678 500
3.5km
Accreting or stable
This unit consists of a regular shoreline with a low lying foreshore dominated by mud and boulders. The high sediment load from the River Dee are leading to accretion on this section of the coast.



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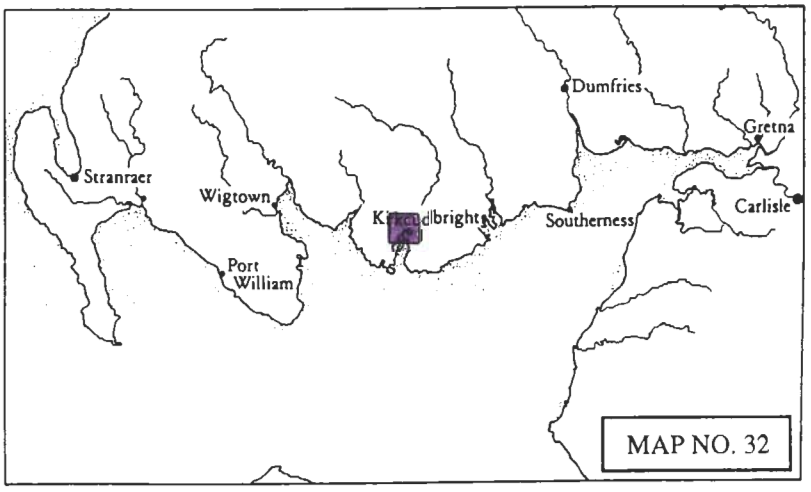
KEY

Erosion class	Derwent Code	Colour
Definitely accreting	Prussian Blue	
Accreting/stable	Light Blue	
Stable	Grass Green	
Stable/eroding	Deep Chrome	
Definitely eroding	Deep Vermilion	
Both accreting and eroding	Imperial Purple	
No access	Blank	
Land below 10m	Straw Yellow	

MAP CLASS: **EROSION**
Assessment date: 04.10.96
Scale 1:25 000



MAP 32: BUILT HERITAGE AND ARCHAEOLOGY

Sites on the Coast Edge & Foreshore

NX 6732 5055
GIBBHILL - CASTLEDYKES POINT
Shipwreck, Jetty & 'Yair'
Uncertain
Poor
Survey & Monitor

NX 6757 5100
RIVER DEE, KIRKCUDBRIGHT
Shipwreck
Uncertain
Poor
Survey & Monitor

NX 6795 5134
RIVER DEE, KIRKCUDBRIGHT
Yair
Uncertain
Poor
Survey & Monitor

NX 6840 5125
KIRKCUDBRIGHT
Bridge
Statutory Listed Building
Early 20th century
Good
Nil

NX 682 511
CASTLEBANK, KIRKCUDBRIGHT
Harbour Cottage
Statutory Listed Building
Early 19th century
Good
Nil

NX 682 511
KIRKCUDBRIGHT
Harbour Cottage Gallery
Statutory Listed Building
19th century
Good
Nil

NX 682 511
KIRKCUDBRIGHT
Castlebank Shorehouse
Statutory Listed
Building
18th century
Good
Nil

NX 685 510
BROUGHTON
HOUSE
Garden
Early 20th century
Good
Nil

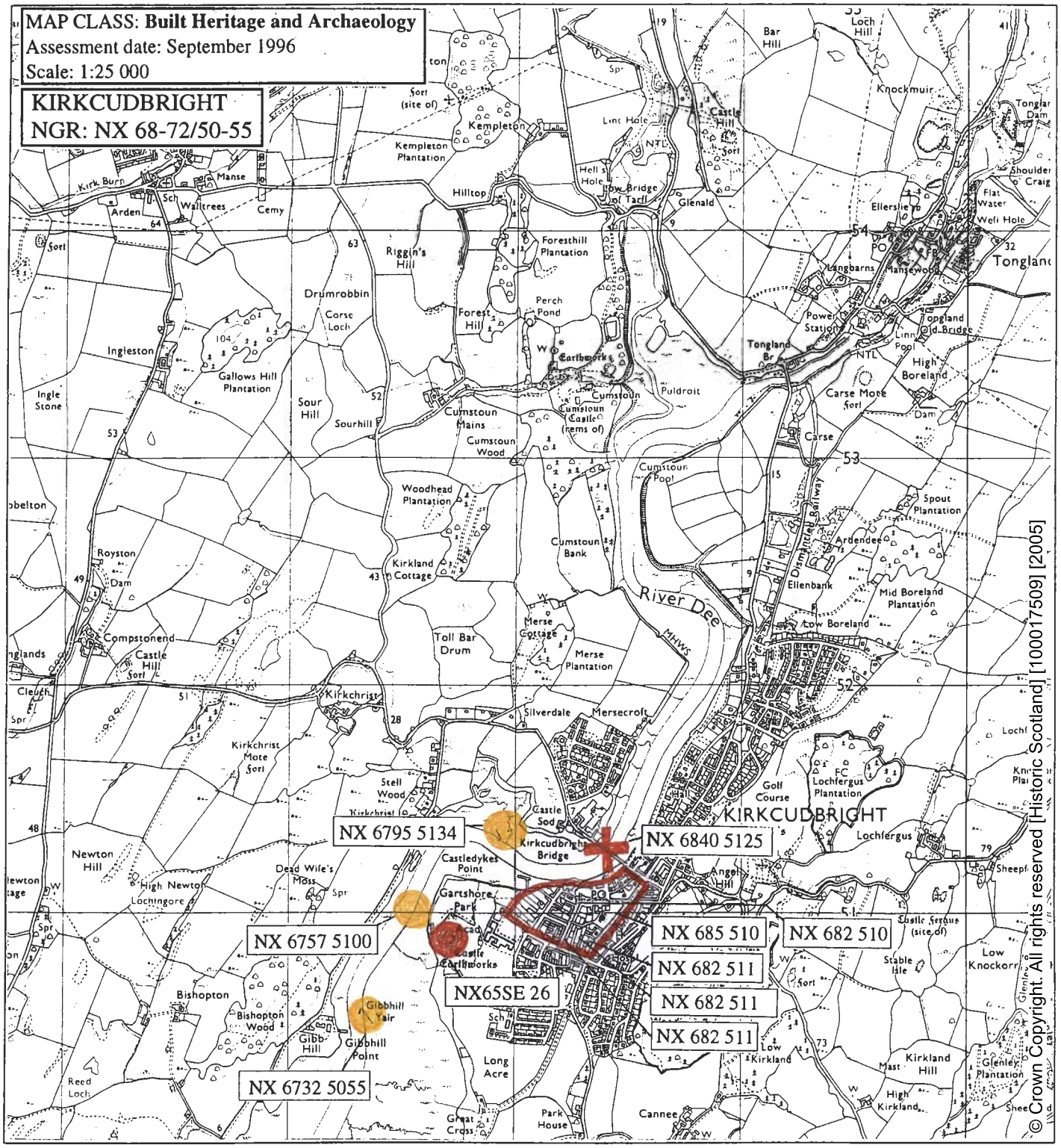
NX65SE 26
NX 6771 5088
KIRKCUDBRIGHT
Kirkcudbright Castle
Scheduled Ancient
Monument
13th century
Good
Nil

Sites in the Hinterland

NX 682 510
MACLELLAN'S CASTLE
KIRKCUDBRIGHT
Castle
Statutory Listed Building
16th century
Good
Nil

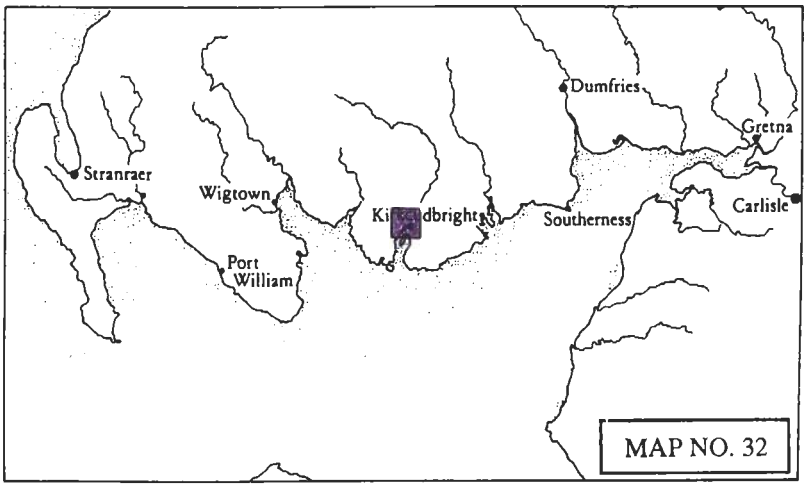
MAP CLASS: **Built Heritage and Archaeology**
Assessment date: September 1996
Scale: 1:25 000

KIRKCUDBRIGHT
NGR: NX 68-72/50-55



KEY

Site location	Symbol	Colour	Significance
NGR ref. - eg. NX 143 368	Roundel - Solid, (or area)	Red	Protected Ancient Monument
	Cross	Red	Listed Historic Building
	Roundel - Open, (or area)	Red	Monument formally proposed by Historic Scotland for designation
	Roundel - Solid, (or area)	Yellow	Other known Ancient Monument
NMRS ref. - eg. NX13 SW17	Dashed outline	Yellow	Gardens/Designed landscape
	Roundel - Solid, (or area)	Yellow	Undesignated wreck
	Area	Green	Insufficient information; more work needed
	Area	Blue	Probably archaeologically sterile



MAP 33: BATHINGHOUSE BAY TO MULLOCK BAY

Hinterland Geology and Coastal Geomorphology: Part of this coastline forms the lower estuary of Kirkudbright Bay. The region eastwards from Port Muddle has an exposed southerly aspect. The hinterland geomorphology over this region contains fluvioglacial drift.. This breaks at Torrs Point where till covers visible rock to Port Muddle. Here marine deposits give way to glacial sands and gravels probably of Devensian age. At the head of Mullock Bay raised beach forms a steep cliff-edge. In general the cliff-edge is higher than 10m throughout this region. This overlooks wide rock platform, off-shore stacks and wide gullies. Both Port Mudle and Port Mullock lie on major fault lines dividing and a enclosing differing geological units (Stone *et.al.*1996).

Erosion Class: Owing to the very exposed position of this coastline and the formation of deep gullies and wide wave cut platforms it is classified as definitely eroding. The rate of erosion is considered to be slow. Sub-aerial weathering of the softer glacial deposits at the head of Mullock Bay gives rise to a series of terraced slopes.

Built Heritage & Archaeology: A range of sites, dating from the third millennium BC to the medieval period, comprising cup markings, an earthwork, a cave, a castle and a spring form the majority in this section of the coast. Although most are situated on the coastal edge none are visibly suffering from coastal erosion. Torrs Cave (Graham & Truckell, 1977, 141), however, could not be located in the rapid survey and doubts are raised as to its condition. The majority of the sites are also located within the Dundrennan Army Range and therefore little animal impact affects their condition.

Map 33: Hinterland Geology and Coastal Geomorphology

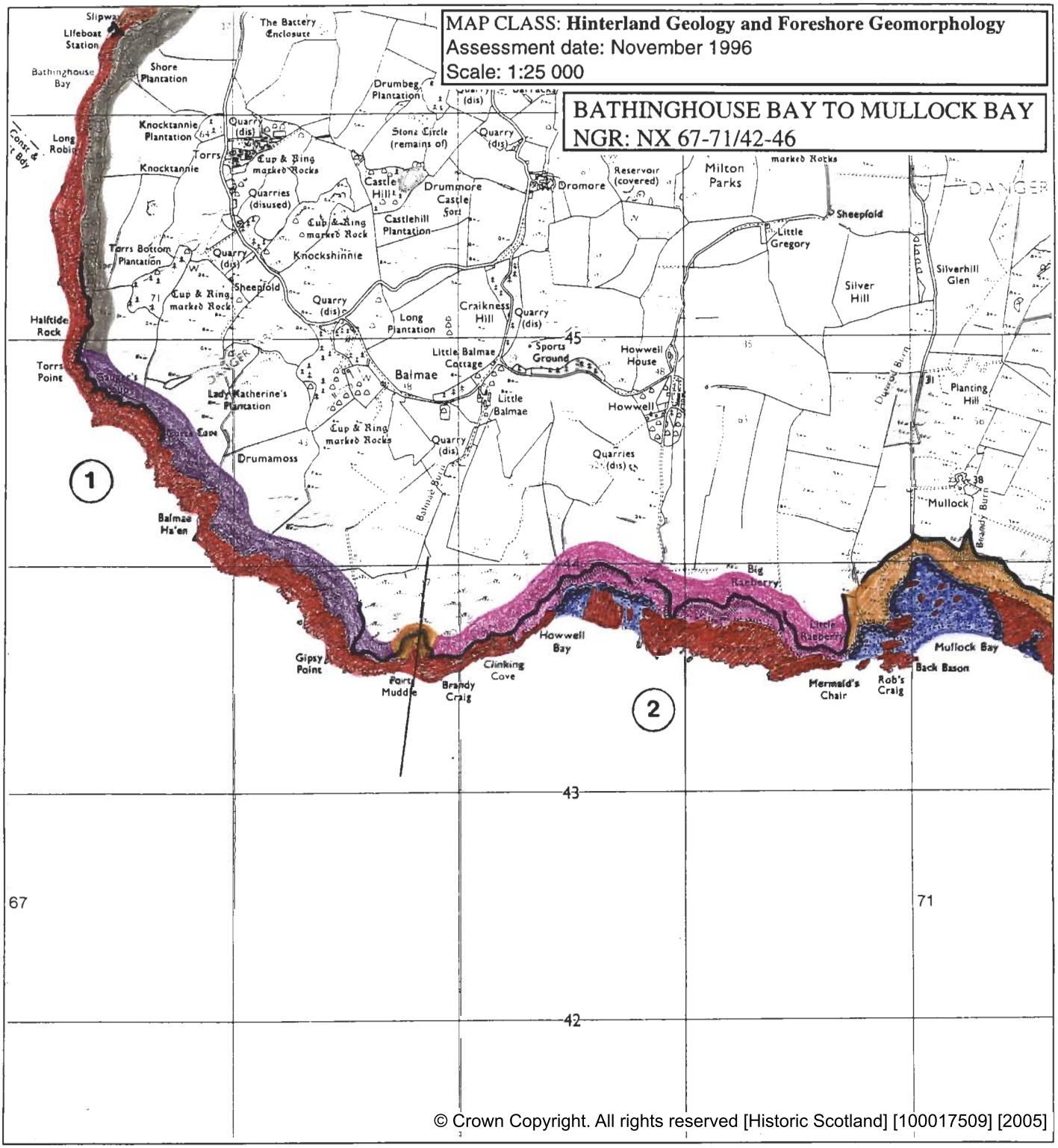
---

1. North of SHORE PLANTATION to PORT MUDDLE
NX 673 450
4km Cliff (< 10m)
Glacial drift and till over rock
This unit has a very irregular cliff-edge that becomes deeply incised towards the south. Rock platforms occur the length of this unit. Glacial drift contain facies of brecciated clay and greywackee. From Torrs Point the overlying hinterland geology is till .

2. PORT MUDDLE to NETHERLAW POINT
NX 705 436
3km
Cliff (> 10m)
Glacial sands and gravels, raised beach
Port muddle is a small bay indented along a major fault line. The Hinterland geology is glacial sands and gravels overlying a high cliff-edge. Marine sands and gravels outcrop above Mullock Bay and overlie thinly bedded sandstones and mud stones. The cliff-edge gradient is steep. The foreshore consists of greywackee platforms exposed down to the MHWM with boulders and sand at Mullock Bay.

MAP CLASS: **Hinterland Geology and Foreshore Geomorphology**
Assessment date: November 1996
Scale: 1:25 000

BATHINGHOUSE BAY TO MULLOCK BAY
NGR: NX 67-71/42-46



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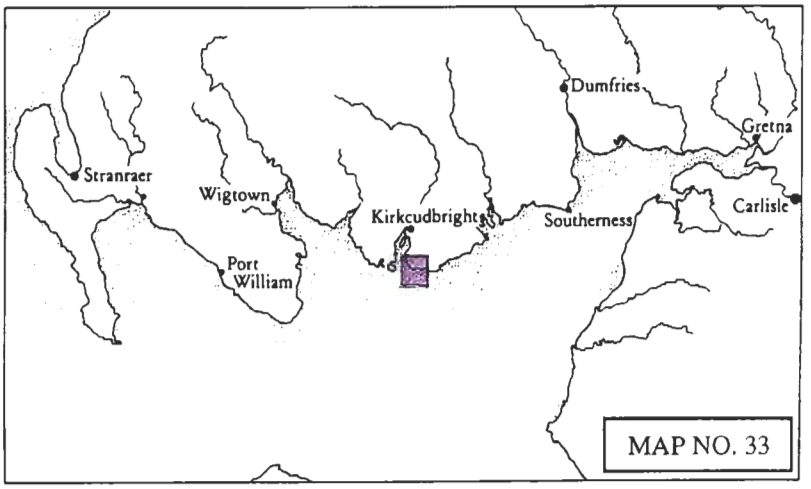
KEY

Hinterland Geology	Derwent Code	Colour
Drift, boulder clay	French Grey	
Drift, boulder clay over visible rock	Dark Violet	
Raised beach and marine deposits	Golden Brown	
Blown sand	Pink Madder Lake	
Glacial sand and gravel	Magenta	
Alluvium	Emerald Green	
Coastal Geomorphology		
Mainly rock platform	Deep vermilion	
Mainly sand	Ultramarine	
Mainly alluvial/marine mud	Venetian Red	
Marsh	May Green	
Coast Edge		
Low edge (<5m)	Thin black line	
Cliff (>5m)	Solid black line	
Man made barrier	Black line with spines	
Shingle beach	Small circles	oooooo
Human disturbance	Black carats	^^^^^^^



MAP 33: EROSION

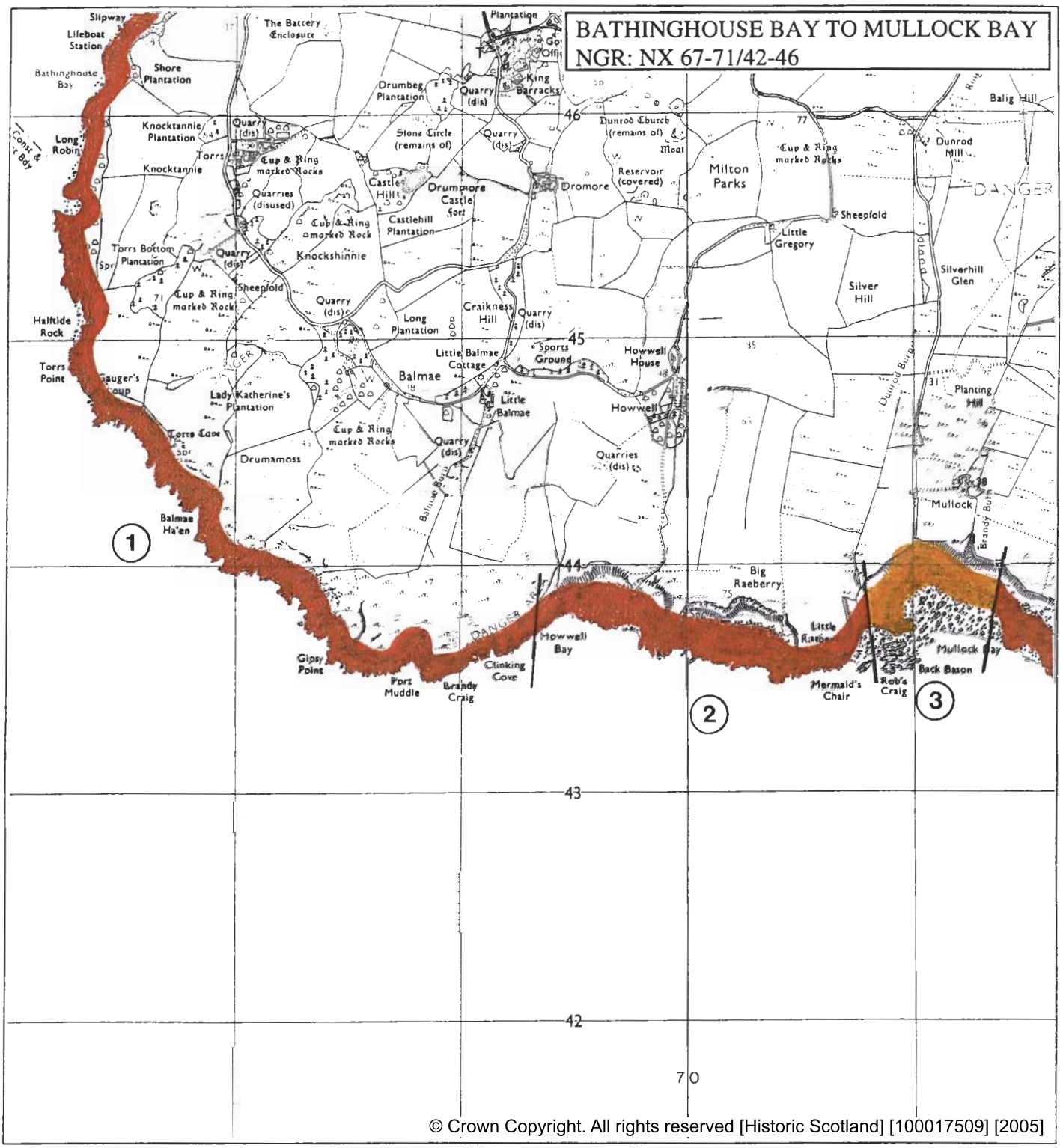
---

1. South of TORRS MOOR to HOWWELL BAY
NX 673 450
4km
Definitely eroding
This region of coastline is exposed to south westerly gales. The cliff-edge is very irregular and deeply incised. Rock platform is exposed at the MHWM and is scoured by the effects of wave action. Cliff retreat is slow owing to the resilience of the underlying geology.

2. HOWELL BAY east to ROBS CRAIG
NX 270 436
1.5km
Definitely eroding
This unit has a very irregular cliff-edge. High rock platforms have been cut into deep gullies. The cliff is slowly eroding.

3. MULLOCH BAY
NX 702 483
0.4km
Eroding or stable
This unit contains Mullock Bay. Large boulders intermixed with shingle occur within the bay. At the MHWM cliff material of fluvioglacial origin is slowly eroding out.

BATHINGHOUSE BAY TO MULLOCK BAY
NGR: NX 67-71/42-46



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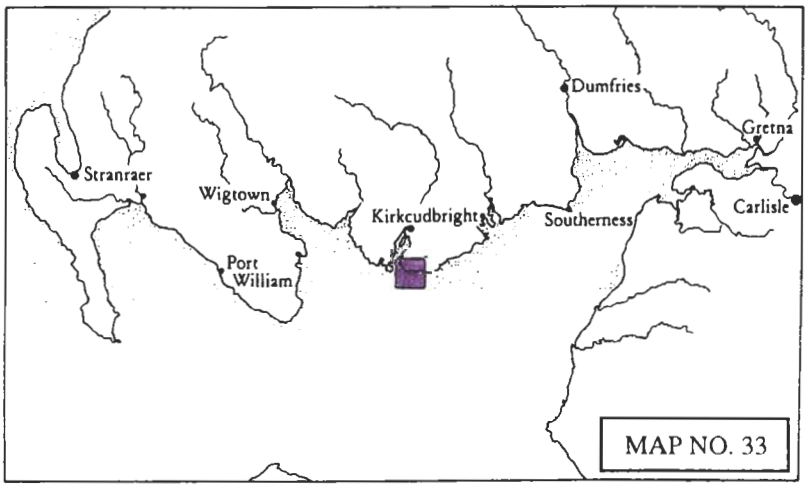
KEY

Erosion class	Derwent Code	Colour
Definitely accreting	Prussian Blue	
Accreting/stable	Light Blue	
Stable	Grass Green	
Stable/eroding	Deep Chrome	
Definitely eroding	Deep Vermilion	
Both accreting and eroding	Imperial Purple	
No access	Blank	
Land below 10m	Straw Yellow	

MAP CLASS: **EROSION**
Assessment date: 15.10.96
Scale 1:25 000



MAP 33: BUILT HERITAGE AND ARCHAEOLOGY

Sites on the Coast Edge & Foreshore

NX64SE 31
NX 6738 4490
TORRS POINT
Cup Markings
3rd/2nd Mill BC
Uncertain; not located
Nil

NX64SE 30
NX 6739 4485
TORRS POINT
Cup Markings
2nd/3rd Mill BC
Uncertain; not located
Nil

NX64SE 5
NX 6767 4459
TORRS CAVE
Cave
1st Mill BC/AD
Uncertain; not located
Nil

NX64SE 16
NX 6768 4452
TORRS COVE BAY
Landing Place
Uncertain
Uncertain; not located
Nil

NX64SE 6
NX 6990 4373
RAEBERRY CASTLE
Castle
Uncertain
Good
Nil

NX64SE 14
NX 6999 4378
ST MARGARET'S WELL
Spring
Uncertain
Uncertain; not located
Nil

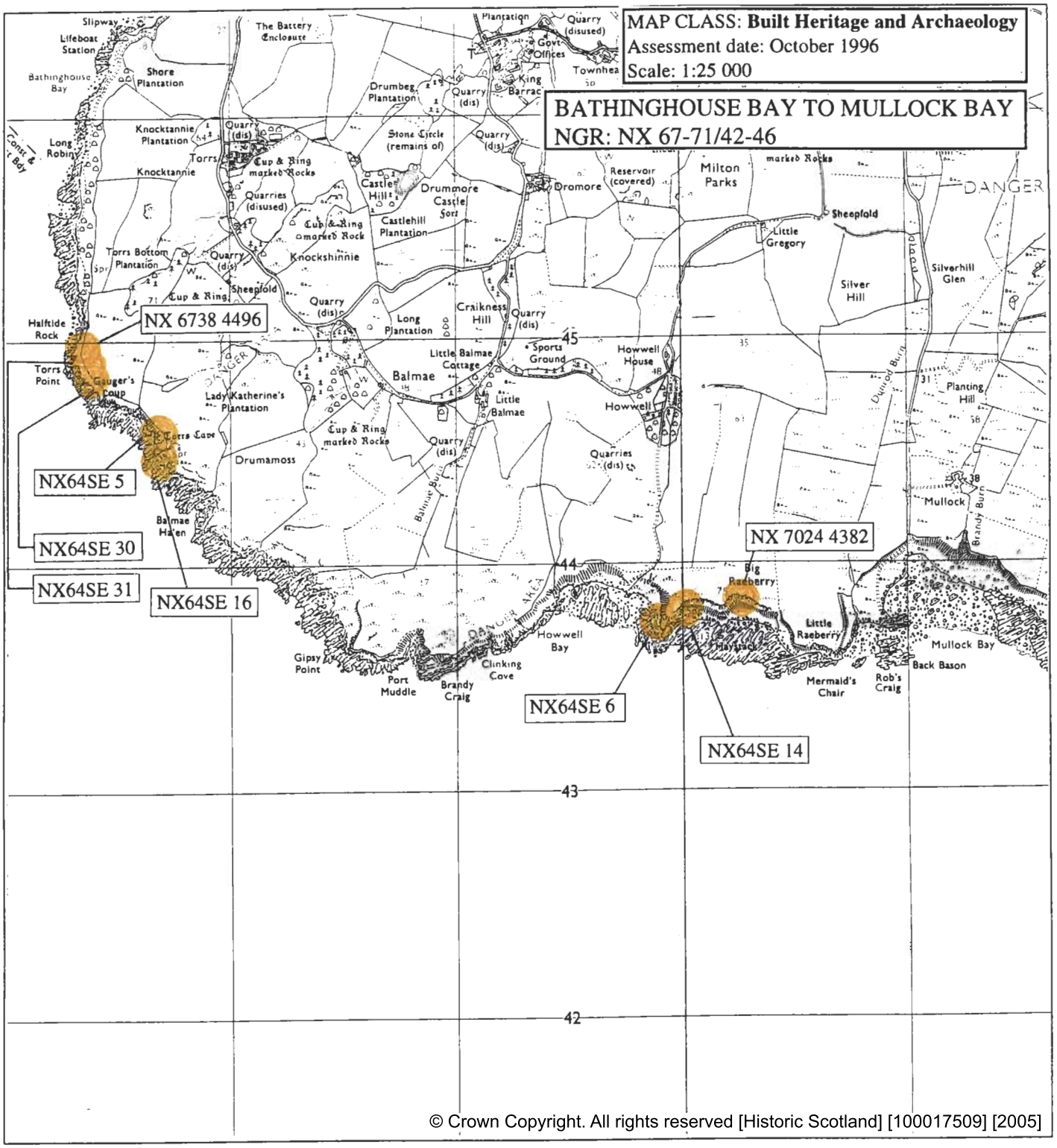
Sites in the Hinterland

NX 6738 4496
KING WILLIAM'S BATTERY
Earthwork
Uncertain
Uncertain; not located
Nil

NX 7024 4382
WALLACE'S PUTTING STONE
Inscribed Rock Outcrop
Uncertain
Good
Nil

MAP CLASS: **Built Heritage and Archaeology**
Assessment date: October 1996
Scale: 1:25 000

BATHINGHOUSE BAY TO MULLOCK BAY
NGR: NX 67-71/42-46



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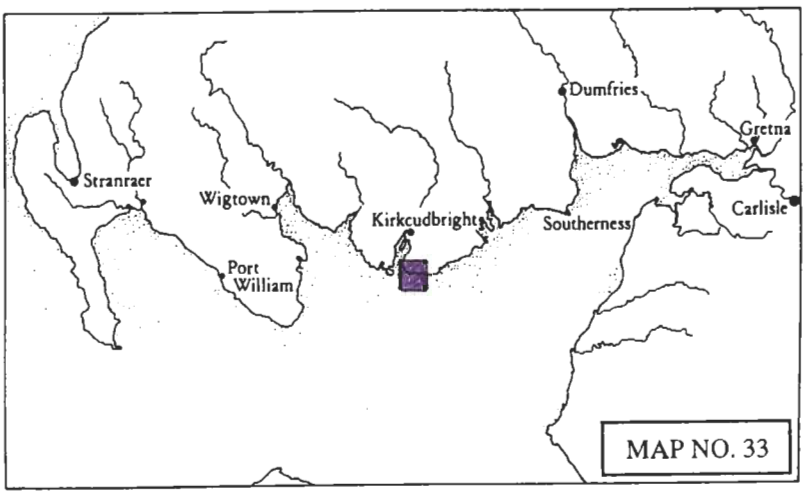
KEY

Site location	Symbol	Colour	Significance
NGR ref. - eg. NX 143 368	Roundel - Solid, (or area)	Red	Protected Ancient Monument
	Cross	Red	Listed Historic Building
	Roundel - Open, (or area)	Red	Monument formally proposed by Historic Scotland for designation
NMRS ref. - eg. NX13 SW17	Roundel - Solid, (or area)	Yellow	Other known Ancient Monument
	Dashed outline	Yellow	Gardens/Designed landscape
	Roundel - Solid, (or area)	Yellow	Undesignated wreck
	Area	Green	Insufficient information; more work needed
	Area	Blue	Probably archaeologically sterile



MAP 34: MULLOCK BAY TO PORT MARY

Hinterland Geology and Coastal Geomorphology: This region of coastline shares the same geomorphologic characteristics as is depicted on Map 33. The hinterland geology consist of mainly till over outcropping rock. The cliff -edge is precipitous with limited access. Morainic drift outcrops at Netherlaw Point. Glacial drift flanks White Port Bay. This bay and Abby Foot Bay both contain raised beach deposits possibly from the Main Holocene Marine Transgression. The rock platform is exposed down to the LWMS mark.

Erosion Class: Given the exposed position of this particular section of coastline it is considered to be definitely eroding. At Abbey Burn Foot sand and boulders are banking up against the current HWMS. Finer sand and shingle is present at the head of Port Mary and was seen to be stable.

Built Heritage & Archaeology: The archaeology of this section of the coast is dominated by the small cluster of monuments at Port Mary, comprising a natural landing place, on the coastal edge, and a promontory fort and listed building in the immediate hinterland. Coastal erosion does not affect any of the sites. Of much greater significance to the condition of the promontory fort of Castleyards is the occurrence of a pit containing dead sheep and calves immediately within the interior of the rampart. A survey and monitoring programme is strongly recommended.

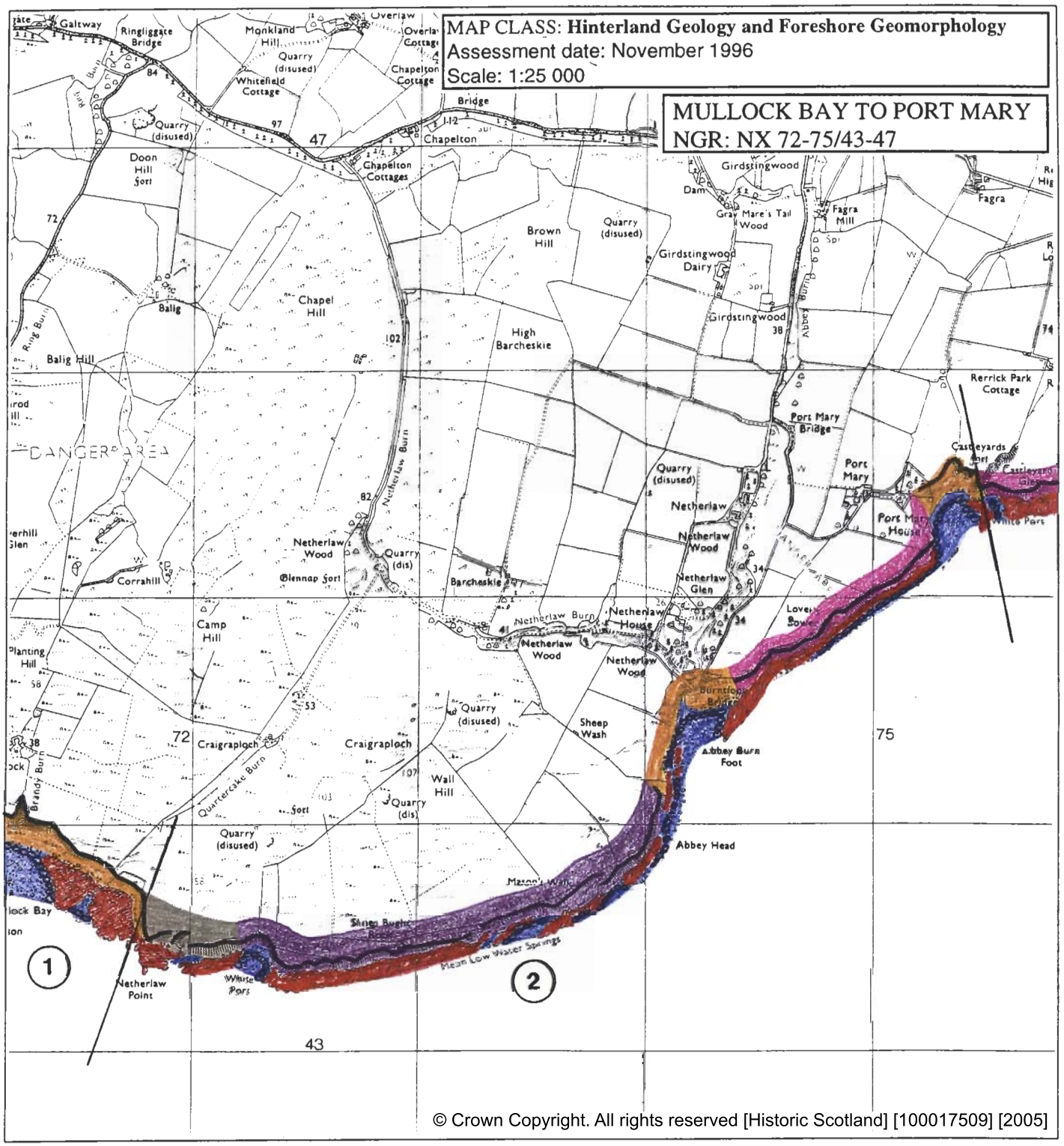
Map 34: Hinterland Geology and Coastal Geomorphology

1. PORT MUDDLE to NETHERLAW POINT
NX 705 436
3km
Cliff (> 10m)
Glacial sands and gravels, raised beach
Port muddle is a small bay indented along a major fault line. The Hinterland geology is glacial sands and gravels overlying a high cliff-edge. Marine sands and gravels outcrop above Mullock Bay and overlie thinly bedded sandstones and mud stones. The cliff-edge gradient is steep. The foreshore consists of greywackee platforms exposed down to the MHWM with boulders and sand at Mullock Bay.

2. NETHERLAW POINT to WHITE PORT
(near Port Mary Bay)
NX 730 434
4.5km
Cliff (> 10m)
Till over visible rock
Till covers visible limestone rock platform. Marine sands and gravels form raised beaches at Abbey Burn Foot and Port Mary both of which are on major fault lines. In between these two bays glacial sands and gravels occur. The foreshore consists of limestone platforms with large boulders intermixed with shingle and sand.

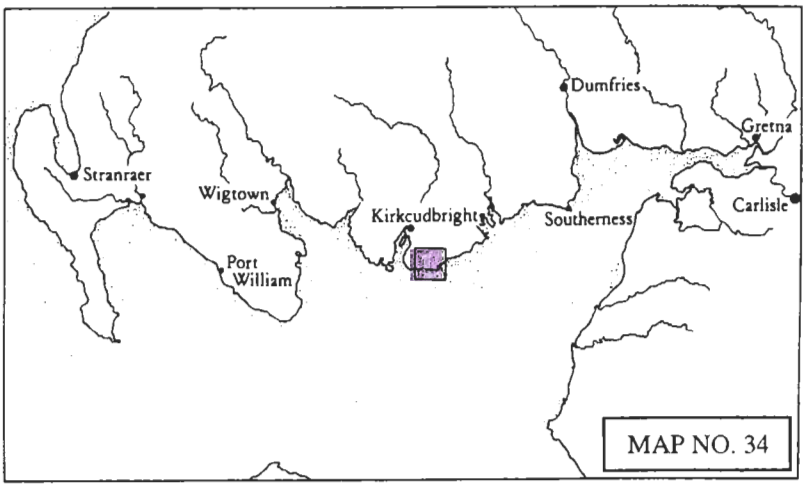
MAP CLASS: **Hinterland Geology and Foreshore Geomorphology**
Assessment date: November 1996
Scale: 1:25 000

MULLOCK BAY TO PORT MARY
NGR: NX 72-75/43-47



KEY

Hinterland Geology	Derwent Code	Colour
Drift, boulder clay	French Grey	
Drift, boulder clay over visible rock	Dark Violet	
Raised beach and marine deposits	Golden Brown	
Blown sand	Pink Madder Lake	
Glacial sand and gravel	Magenta	
Alluvium	Emerald Green	
Coastal Geomorphology		
Mainly rock platform	Deep vermilion	
Mainly sand	Ultramarine	
Mainly alluvial/marine mud	Venetian Red	
Marsh	May Green	
Coast Edge		
Low edge (<5m)	Thin black line	
Cliff (>5m)	Solid black line	
Man made barrier	Black line with spines	
Shingle beach	Small circles	000000
Human disturbance	Black carats	^^^^^^



MAP 34: EROSION

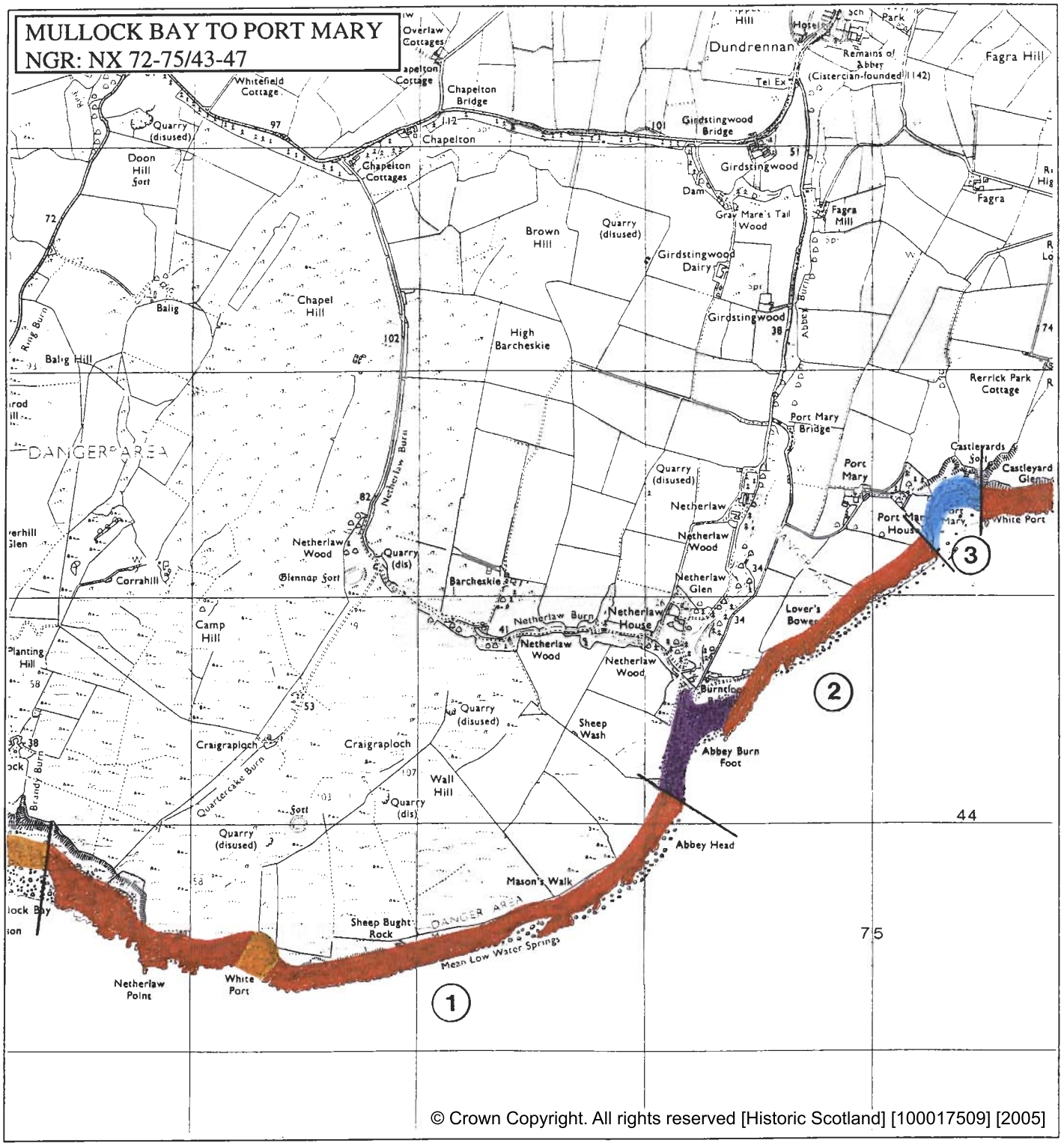
---

1. MULLOCH BAY east to ABBEY HEAD
NX 433 725
2.9km
Definitely eroding
Situated partly on Durness Limestone this part of the coast is exposed with a southerly aspect. The cliffs display notching and scouring and are eroding slowly.

2. ABBEY HEAD to PORT MARY'S HOUSE
NX 745 446
2.5km
Both accreting and eroding
This unit includes Abbey Burn Foot (NX 743 444) which is a shingle dominated beach that gives way to rock platform. The shingle is banking up at the MHWM and appears stable at the present. The exposed cliffs are eroding slowly.

3. PORT MARY'S HOUSE to WHITE PORT
NX 754 454
0.3km
Accreting or stable
This small bay consists of shingle which is banking up at the MHWM. There appears to be no erosion and at the present the beach head is stable.

MULLOCK BAY TO PORT MARY
NGR: NX 72-75/43-47



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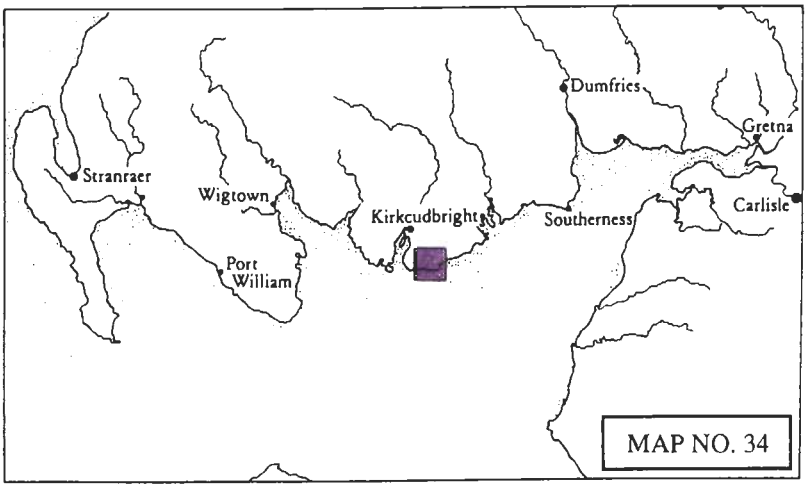
KEY

Erosion class	Derwent Code	Colour
Definitely accreting	Prussian Blue	
Accreting/stable	Light Blue	
Stable	Grass Green	
Stable/eroding	Deep Chrome	
Definitely eroding	Deep Vermilion	
Both accreting and eroding	Imperial Purple	
No access	Blank	
Land below 10m	Straw Yellow	

MAP CLASS: **EROSION**
Assessment date: 15.10.96
Scale 1:25 000



34: BUILT HERITAGE AND ARCHAEOLOGY

Sites on the Coast Edge & Foreshore

NX74SW 4
NX 742 443
ABBEY BURN FOOT
Natural Harbour
Uncertain
Good
Nil

NX74NE 24
NX 753 453
PORT MARY
Landing Place
Uncertain
Uncertain; not located
Nil

Sites in the Hinterland

NX 7512 4542
PORT MARY HOUSE
House
Statutory Listed Building
Late 18th century
Good
Nil

NX75NE 5
NX 7548 4552
CASTLEYARDS
Promontory Fort
1st Mill BC/AD
Good
Nil

MAP CLASS: **Built Heritage and Archaeology**
Assessment date: October 1996
Scale: 1:25 000

MULLOCK BAY TO PORT MARY
NGR: NX 72-75/43-47

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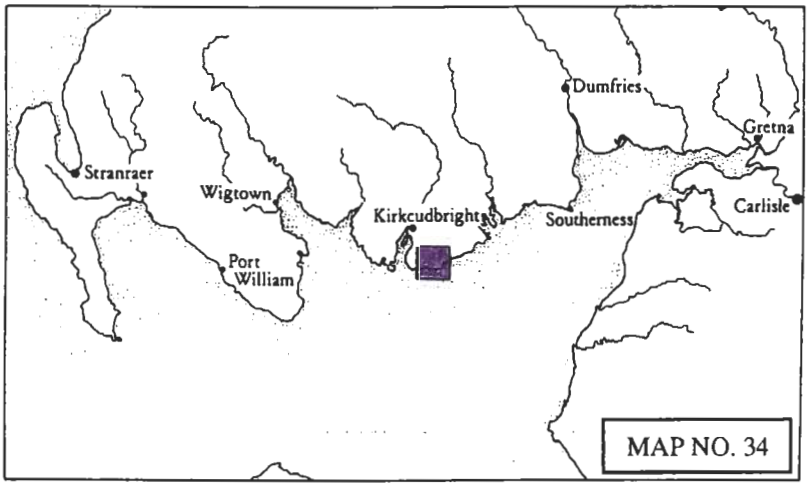
KEY

Site location	Symbol	Colour	Significance
NGR ref. - eg. NX 143 368	Roundel - Solid, (or area)	Red	Protected Ancient Monument
	Cross	Red	Listed Historic Building
	Roundel - Open, (or area)	Red	Monument formally proposed by Historic Scotland for designation
	Roundel - Solid, (or area)	Yellow	Other known Ancient Monument
NMRS ref. - eg. NX13 SW17	Dashed outline	Yellow	Gardens/Designed landscape
	Roundel - Solid, (or area)	Yellow	Undesignated wreck
	Area	Green	Insufficient information; more work needed
	Area	Blue	Probably archaeologically sterile



MAP 35: PORT MARY TO RASCARREL

Hinterland Geology and Coastal Geomorphology: The hinterland geomorphology of this stretch of coastline is predominately fluvioglacial sand and gravel, as exposed at Whitecove (NX 785476). These are interspersed with morainic glacial drift deposits at Barlocco Heugh (NX 793471). Raised beach deposits occur at Barlocco Bay which forms a series of terraces running sub-parallel to the cliff-edge. The cliff-edge is generally higher than 10m and becomes more precipitous further east. The foreshore consists of steeply dipping limestone towards Castle Muir Point. Where the rocks have been eroded into gullies fine sand and shingle is common.

Erosion Class: The cliffs east to Black Cove are steeply dipping limestone that have been eroded along softer bedding planes. Boulders derived from cliff-topple are scouring the basal regions of the cliff. Cliff-retreat is hard to estimate owing to the precipitous nature of the cliffs but it is considered to be slow but ongoing. Shingle is banking up within Barlocco Bay and conditions here appear to be stable.

Built Heritage & Archaeology: This stretch of the coast contains a variety of monuments ranging from the possible forts at Spouty Dennans and promontory fort of Castle Muir of the first millennium BC/AD, to the landing place of Black Cove, to the nineteenth century boathouse and slipway at Orroland Bay. Coastal erosion and storm damage of the latter site and Castle Muir fort merits a recommendation for surveying and monitoring. Impenetrable, thick gorse vegetation cover at Castle Muir should also be taken into account when evaluating the condition of the site.

Map 35: Hinterland Geology and Coastal Geomorphology

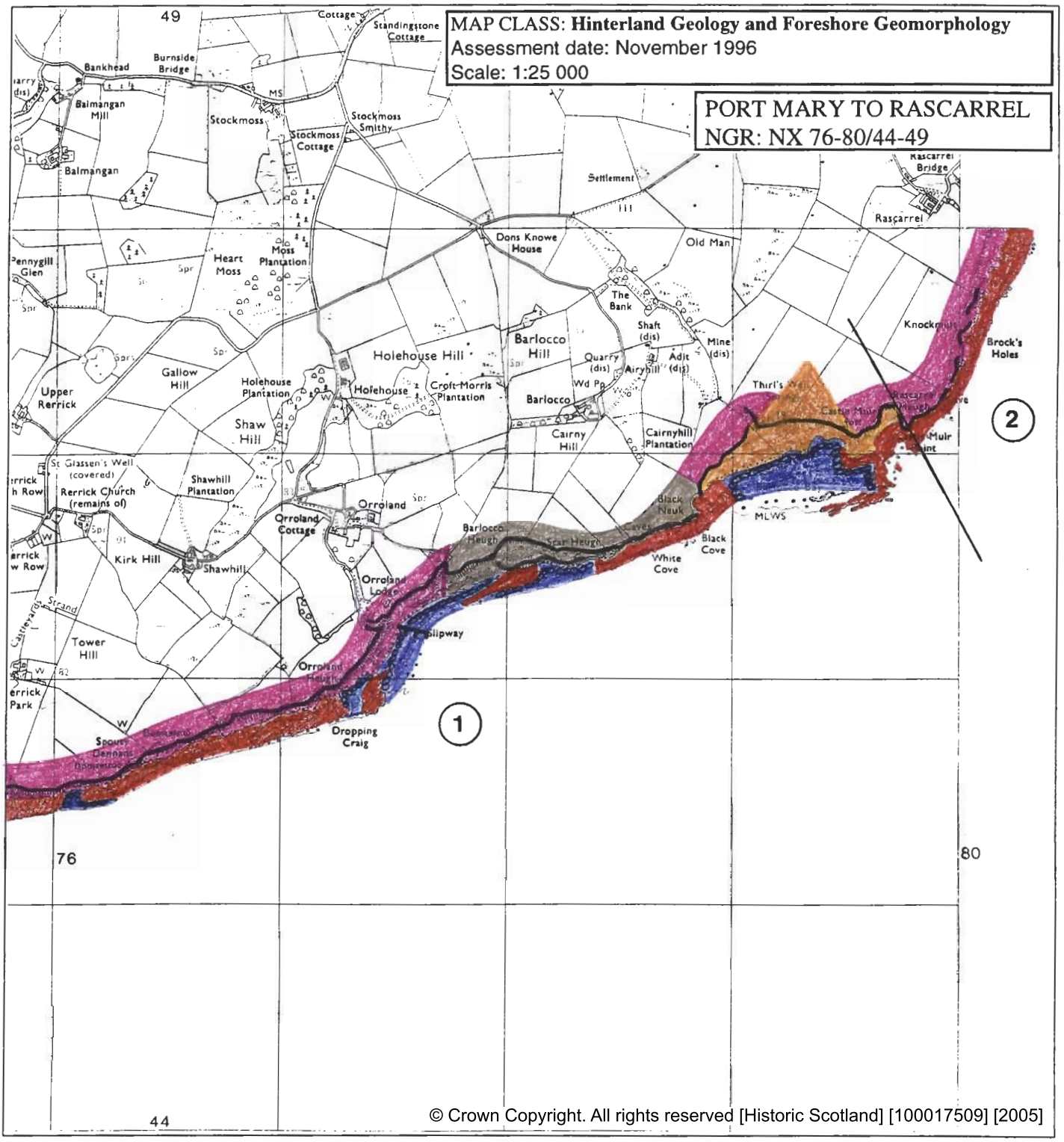
---

1. WHITE PORT to CASTLE MUIR POINT
NX 770 459
4.8km
Cliff (> 10m)
Glacial sands and gravels and fluvioglacial drift
Glacial sands and gravels overly a large proportion of this unit. Fluvioglacial drift outcrops near White Cove (NX 785467). At Barlocco Bay (NX 793471) marine sands and gravels outcrop above the bay. The foreshore contains steeply dipping limestone platform intersected by large boulder beds. Sand and boulders shelve on a low lying beach are present down to the MLWS mark at Barlocco Bay.

2. CASTLE MUIR POINT to AIRDS POINT
NX 814 484
3.3km
Cliff (> 10m)
Raised beach and glacial drift
The high cliff -edge is irregular and overlain by raised beach deposits with glacial drift towards Airds Point. The foreshore consists of exposed rock platform of steeply dipping limestone. Boulder beds intermixed with sand and shingle occur between the rock platforms.

MAP CLASS: **Hinterland Geology and Foreshore Geomorphology**
Assessment date: November 1996
Scale: 1:25 000

PORT MARY TO RASCARREL
NGR: NX 76-80/44-49



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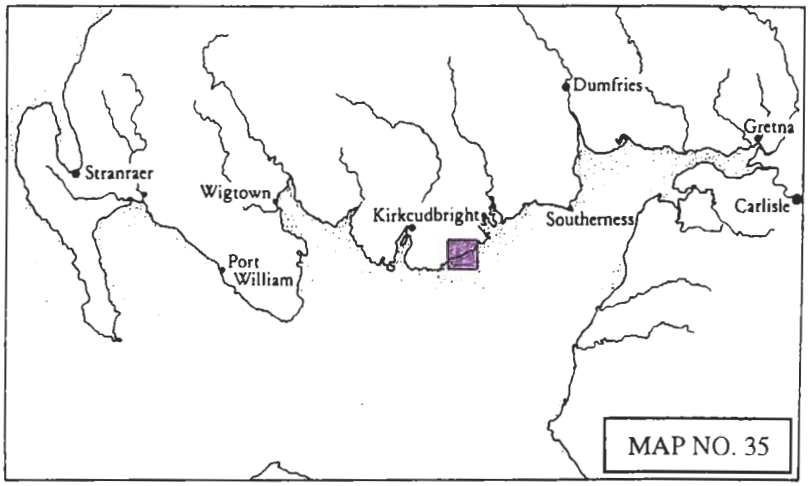
KEY

Hinterland Geology	Derwent Code	Colour
Drift, boulder clay	French Grey	
Drift, boulder clay over visible rock	Dark Violet	
Raised beach and marine deposits	Golden Brown	
Blown sand	Pink Madder Lake	
Glacial sand and gravel	Magenta	
Alluvium	Emerald Green	
Coastal Geomorphology		
Mainly rock platform	Deep vermilion	
Mainly sand	Ultramarine	
Mainly alluvial/marine mud	Venetian Red	
Marsh	May Green	
Coast Edge		
Low edge (<5m)	Thin black line	
Cliff (>5m)	Solid black line	
Man made barrier	Black line with spines	
Shingle beach	Small circles	oooooo
Human disturbance	Black carats	^^^^^^^



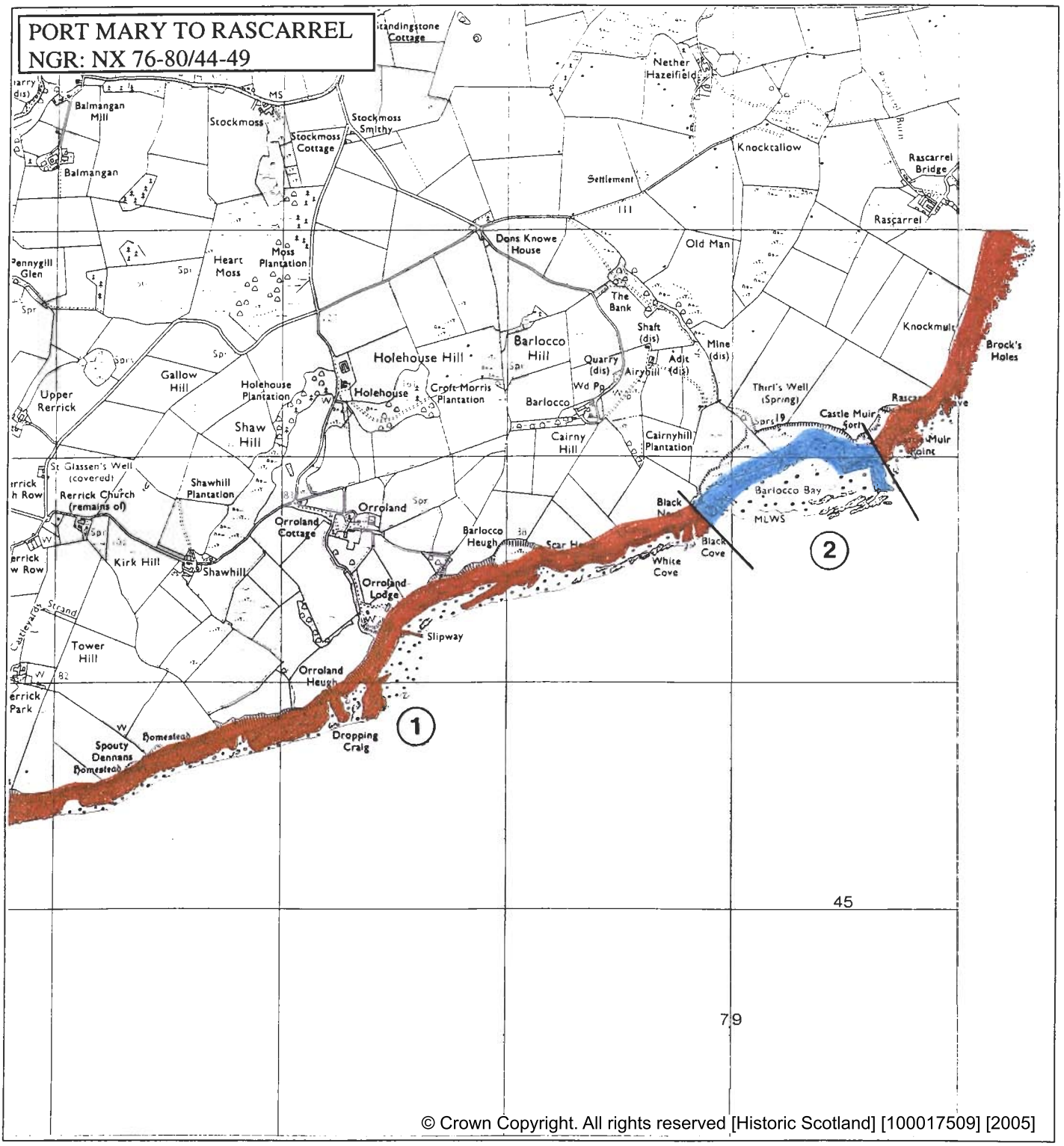
MAP 35: EROSION

---

1. WHITE PORT to BLACK NEUK
NX 774 460
3.6km
Definitely eroding
South facing steeply dipping limestone cliffs that are deeply incised due to the erosion of softer fault planes. Boulders derived from cliff fall are scouring the wider gullies. Cliff-edge retreat is estimated to be slow.

2. BLACK NEUK east to CASTLE MUIR POINT
NX 794 470
0.8km
Accreting or stable
This unit consists of mainly shingle and poorly sorted boulders up to the MHWM. Rock platform is exposed at the MLWM and is trapping both sand and shingle. The shingle is derived from fluvioglacial deposits that outcrop on the shore section.

PORT MARY TO RASCARREL
NGR: NX 76-80/44-49



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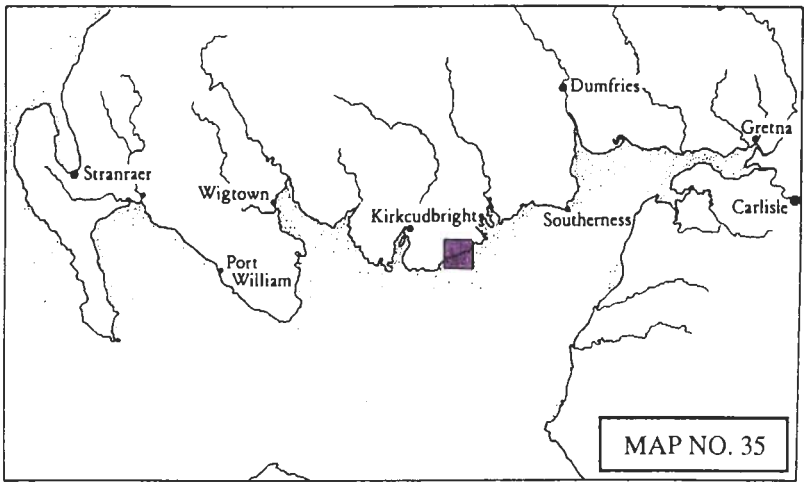
KEY

Erosion class	Derwent Code	Colour
Definitely accreting	Prussian Blue	
Accreting/stable	Light Blue	
Stable	Grass Green	
Stable/eroding	Deep Chrome	
Definitely eroding	Deep Vermilion	
Both accreting and eroding	Imperial Purple	
No access	Blank	
Land below 10m	Straw Yellow	

MAP CLASS: **EROSION**
Assessment date: 11.10.96
Scale 1:25 000



35: BUILT HERITAGE AND ARCHAEOLOGY

Sites on the Coast Edge & Foreshore

NX74NE 8
NX 7635 4561
SPOUTY DENNANS
'Homestead' / Fort
1st Mill BC/AD
Good
Nil

NX74NE 9
NX 7646 4568
SPOUTY DENNANS
'Homestead' / Fort
1st Mill BC/AD
Good
Nil

NX 7746 4623
ORROLAND BAY
Boathouse & Slipway
19th century
Poor
Survey & Monitor

NX74NE 23
NX 7880 4666
BLACK COVE
Landing Place
Uncertain
Uncertain; not visited
Nil

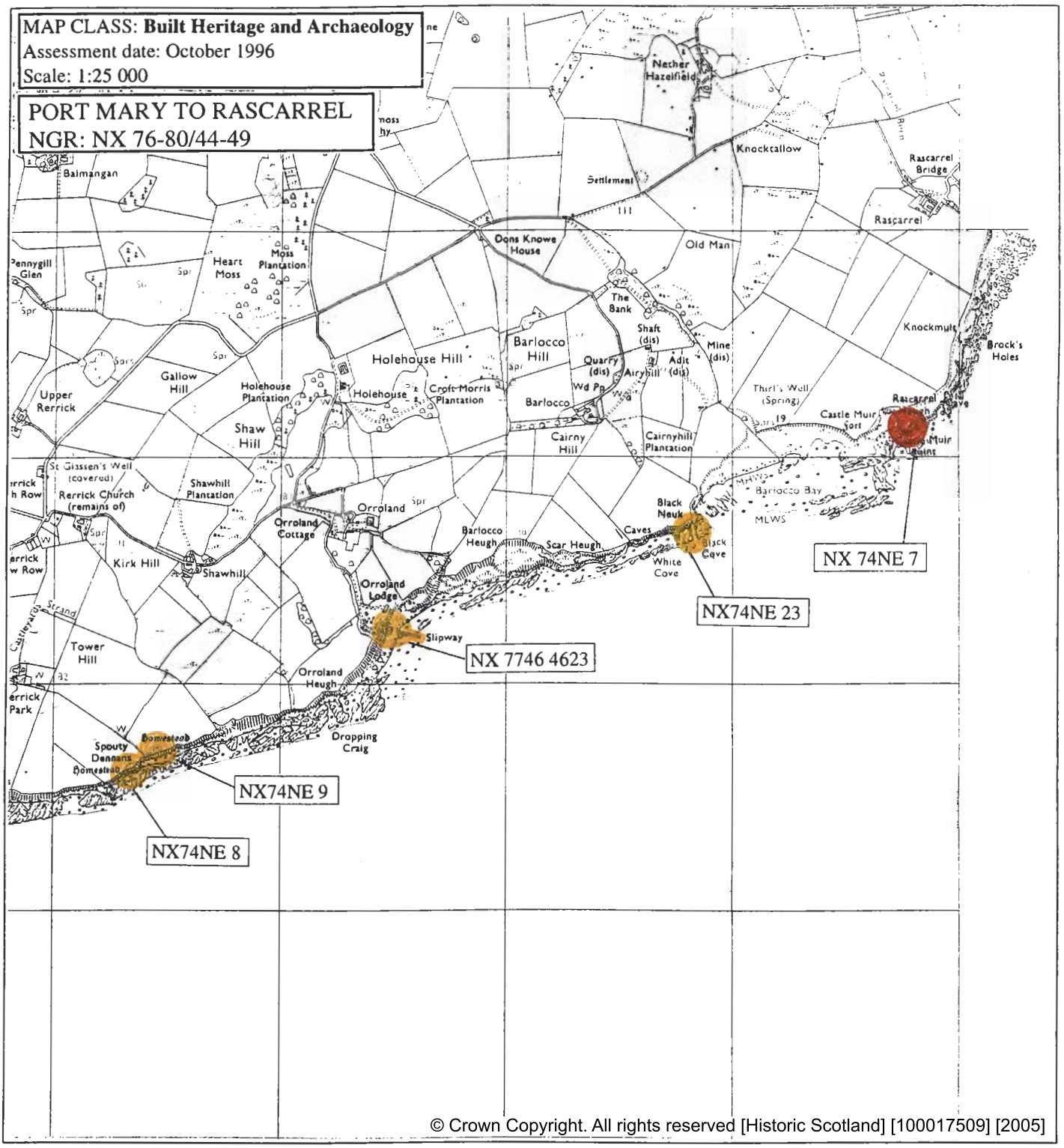
NX74NE 7
NX 7976 4715
CASTLE MUIR
Promontory Fort
Scheduled Ancient Monument
1st Mill BC/AD
Fair
Survey & Monitor

Sites in the Hinterland

None

MAP CLASS: **Built Heritage and Archaeology**
Assessment date: October 1996
Scale: 1:25 000

PORT MARY TO RASCARREL
NGR: NX 76-80/44-49



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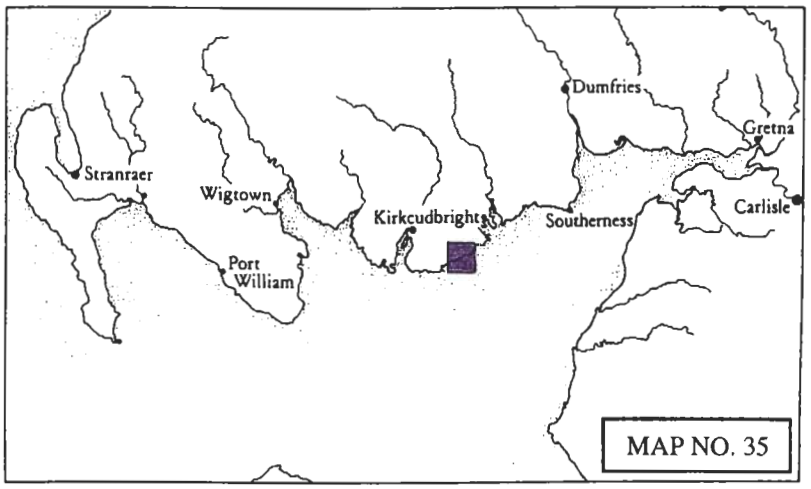
KEY

Site location	Symbol	Colour	Significance
	Roundel - Solid, (or area)	Red	Protected Ancient Monument
NGR ref. - eg.	Cross	Red	Listed Historic Building
NX 143 368	Roundel - Open, (or area)	Red	Monument formally proposed by Historic Scotland for designation
	Roundel - Solid, (or area)	Yellow	Other known Ancient Monument
NMRS ref. - eg.	Dashed outline	Yellow	Gardens/Designed landscape
NX13 SW17	Roundel - Solid, (or area)	Yellow	Undesignated wreck
	Area	Green	Insufficient information; more work needed
	Area	Blue	Probably archaeologically sterile



MAP 36: RASCARREL TO HORSE ISLES

Hinterland Geology and Coastal Geomorphology: The hinterland geology east to Airds Point consists of raised beach deposits and fluvioglacial drift. These overlie an irregular steep cliff-edge. Steeply dipping Carboniferous Limestone outcrops down to the MHWM. This has been incised into two small bays. These are covered with sand and shingle between exposed rock. Towards and northwards from the headland at Balcary Point till and fluvioglacial drift occurs as far as North Lodge. This particular stretch of coast overlooks the sheltered tidal flats at Auchencairn Bay. Marine derived sand and gravel occur at the head of the bay. Here the shoreline is colonised with salt-marsh and vegetated shingle. The small peninsula at Toor Point is covered with till over a low rocky shore. A larger peninsula has been formed at Almorness Point (Unit 4) and is covered with the till.

Erosion Class: The coastline east to Balcary Point is susceptible to erosion owing to its softer geology (Carboniferous Limestone) which is prone not only to wave impact but also the corrosive effects of sea water. However, the rate of erosion in terms of its effect on any archaeology is considered to be slow. Auchencairn Bay is in a sheltered location and north to Orcharton Bay the coastline is stable and accreting in parts. Salt-marsh is a prime factor in coastal stability within both bays. Further east the foreshore at Almorness Point is eroding but considered to be mostly stable.

Built Heritage & Archaeology: A wide range of sites are contained in this section, including a "homestead" (RCAHMS, NX84NW 2) and fort of the first millennium BC/AD, the remains of a fourteenth century manor house, and various eighteenth and nineteenth century listed buildings. Also included are fishing stakes in the wide flats of Auchencairn Bay and a disused mine shaft at Airds Heugh. At only one site; Airds homestead, is limited coastal erosion evident and monitoring required.

Map 36: Hinterland Geology and Coastal Geomorphology

1. CASTLE MUIR POINT to AIRDS POINT
NX 814 484
3.3km
Cliff (> 10m)
Raised beach and glacial drift
The high cliff -edge is irregular and overlain by raised beach deposits with glacial drift towards Airds Point. The foreshore consists of exposed rock platform of steeply dipping limestone. Boulder beds intermixed with sand and shingle occur between the rock platforms.

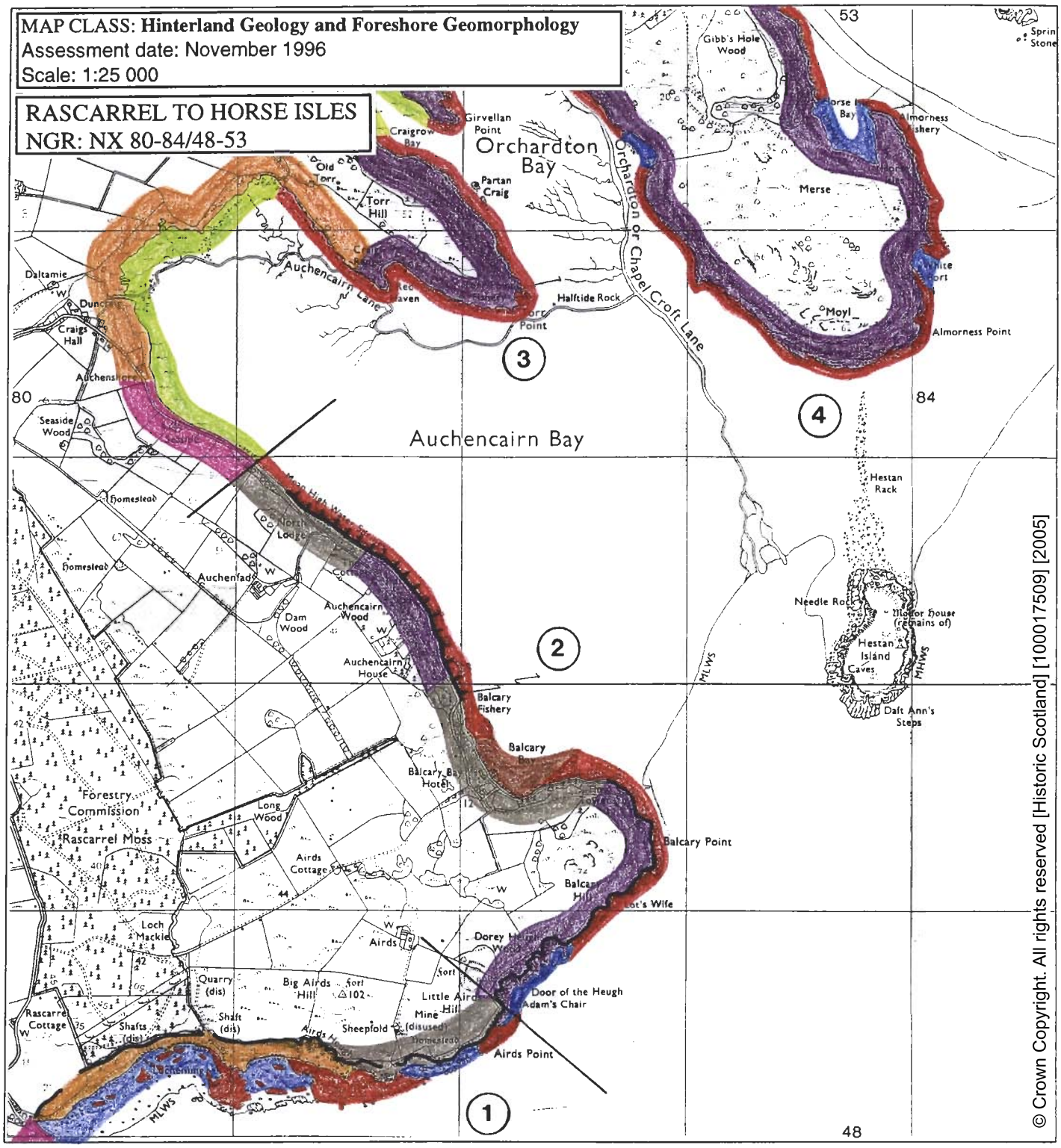
2. AIRDS POINT to north of NORTH LODGE
NX 820 550
4km
Cliff (< 10m)
Till and fluvioglacial drift deposits
Till overlies the exposed promontory headland at Balcary Point. Above Balcary Bay fluvioglacial clays occur along with till immediately to the north. The foreshore is mainly outcropping rock platform with mud and sand intermixed with poorly sorted boulders.

3. North of NORTH LODGE to OAKBANK WOOD
NX 814 520
6km
Low edge (Cliff < 5m, cliff >10m towards west)
Marine deposits and till
The upper tidal reach of Auchencairn Bay and Orchardton Bay. Both these areas contain marine sands and gravels at the bay heads. Torr Point (NX 823517) forms a rocky peninsula between Auchencairn Bay and the smaller Craigrow Bay. All three bays have well established salt-marsh which border low lying mud flats.

4. OAKBANK WOOD to north of GIBB'S HOLE WOOD
NX 844 540
3km
Cliff (< 10m)
Till over visible rock
This unit contains a peninsula that forms a division between Orchardton Bay and Rough Firth. Till overlies an irregular cliff-edge. The foreshore on both sides of the peninsula consists of greywackee rock platform which is broken only at White Port (NX 841519) and Horse Isles Bay (NX837524). Here the beaches are sand and shingle.

MAP CLASS: **Hinterland Geology and Foreshore Geomorphology**
Assessment date: November 1996
Scale: 1:25 000

RASCARREL TO HORSE ISLES
NGR: NX 80-84/48-53



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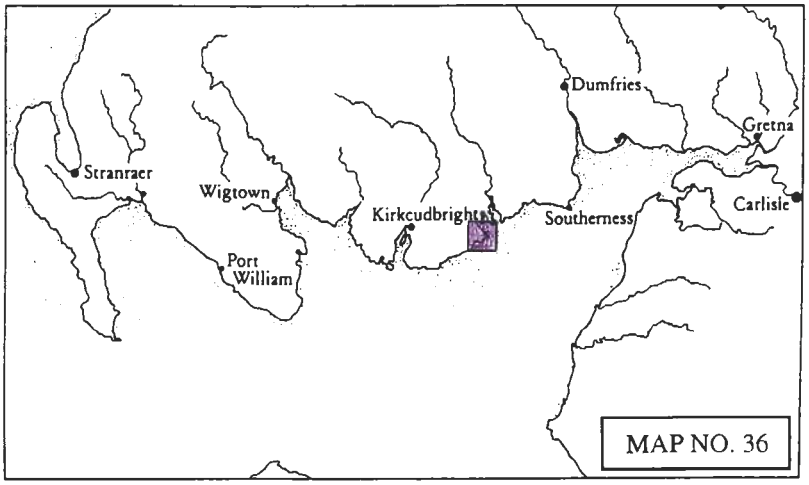
KEY

Hinterland Geology	Derwent Code	Colour
Drift, boulder clay	French Grey	
Drift, boulder clay over visible rock	Dark Violet	
Raised beach and marine deposits	Golden Brown	
Blown sand	Pink Madder Lake	
Glacial sand and gravel	Magenta	
Alluvium	Emerald Green	
Coastal Geomorphology		
Mainly rock platform	Deep vermilion	
Mainly sand	Ultramarine	
Mainly alluvial/marine mud	Venetian Red	
Marsh	May Green	
Coast Edge		
Low edge (<5m)	Thin black line	
Cliff (>5m)	Solid black line	
Man made barrier	Black line with spines	
Shingle beach	Small circles	000000
Human disturbance	Black carats	^^^^^^^



MAP 36: EROSION

1. CASTLE MUIR POINT to LOCHENLING
NX 805 483
2.3km
Definitely eroding
This unit consists of an irregular exposed cliff-edge which is highly fractured and indented with deep gullies. These are being slowly eroded by wave action and boulder abrasion. .

2. LOCHENLING to BALCARY POINT
NX 821 484
2.1km
Definitely eroding
Exposed promontory headland that is deeply incised with an irregular cliff-edge. The base of the cliffs are being scoured by cliff-fall and slump debris.

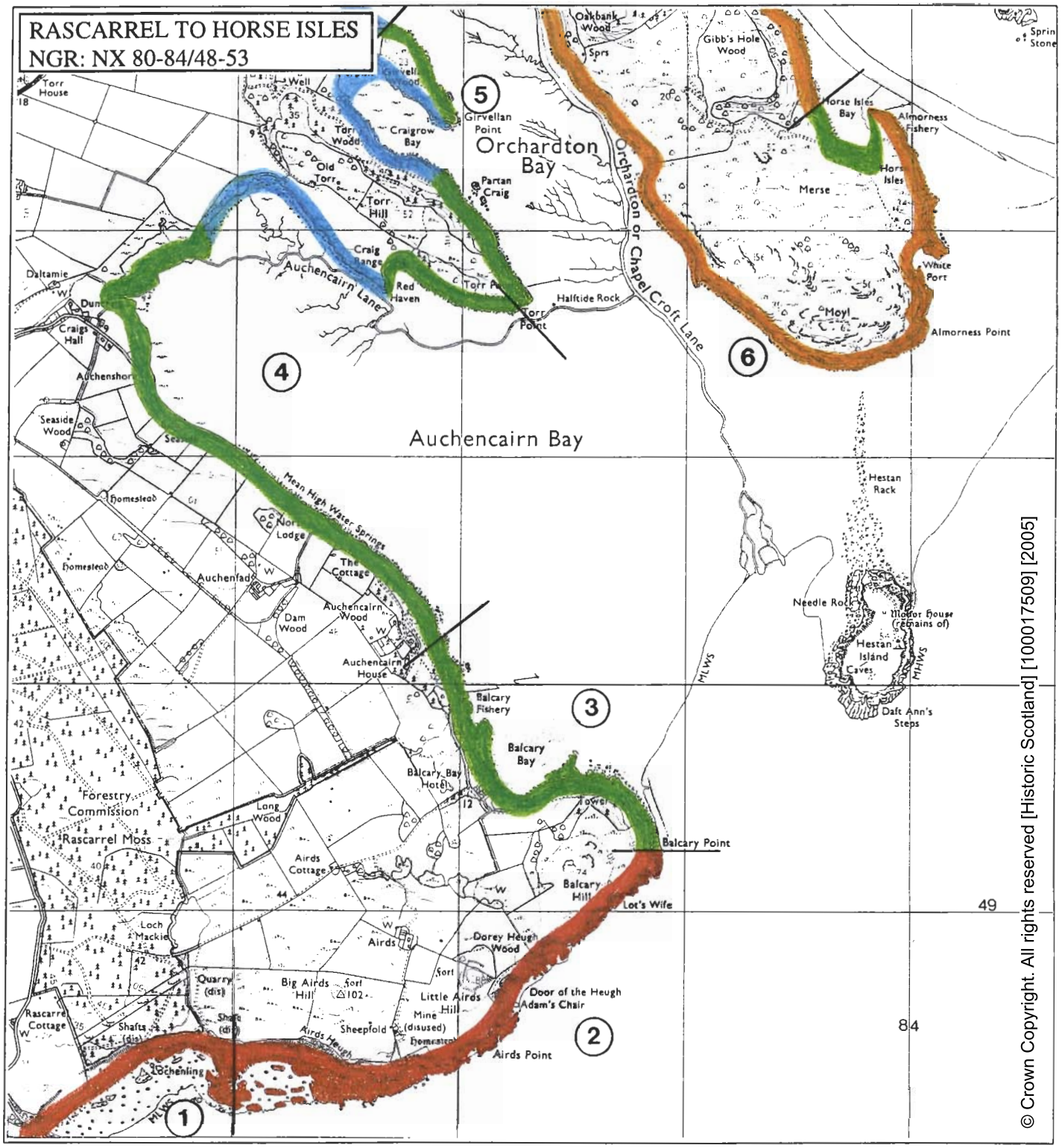
3. BALCARY POINT to AUCHENCAIRN HOUSE
NX 823 495
1.5km
Stable
Balcary Bay (NX 832495) is sheltered from the extreme storm conditions by Balcary Point (NX 828493). The beaches consist of poorly sorted boulders with shingle banks at the MHWM. Sea walls afford protection along with tree cover and grasses.

4. AUCHENCAIRN HOUSE to TORR POINT
NX 806 514
3.6km
Stable and accreting in parts
This unit contains Auchencairn Bay that has a low intertidal area consisting of mainly mud flats. The shoreline is well vegetated and therefore imparting stability to the beaches. Towards Auchencairn Lane (NX 813520) a small bay is dominated by stable mud flats that appear to be accreting.

5. TORR POINT to north of GIRVELLEN WOOD
NX 816 524
2.3km
Stable and accreting in parts
This unit is sheltered and consists of a wide exposed mud flats. Saltmarsh is well established in Craigrow Bay (NX 815525) and is stable. The shoreline either side of the bay is stable.

6. North of OAKBANK WOOD to HORSE ISLE BAY
NX 837 514
4.9km
Eroding or stable
This unit consists of a large promontory that has an outcropping rock and boulder shoreline. This becomes more incised on its eastern side which is more exposed to wave action. Erosion is reduced by the resilient nature of the hard granites occurring at this location. Horse Isle Bay is stable owing to its sheltered position.

RASCARREL TO HORSE ISLES
NGR: NX 80-84/48-53



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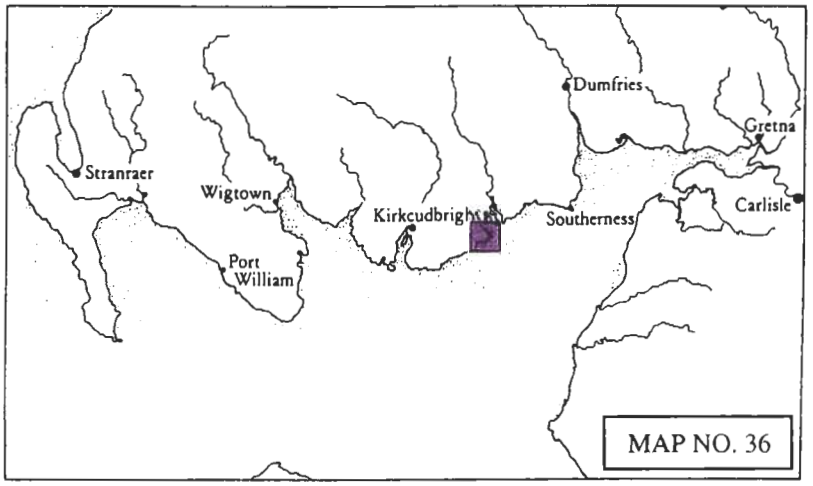
KEY

Erosion class	Derwent Code	Colour
Definitely accreting	Prussian Blue	
Accreting/stable	Light Blue	
Stable	Grass Green	
Stable/eroding	Deep Chrome	
Definitely eroding	Deep Vermilion	
Both accreting and eroding	Imperial Purple	
No access	Blank	
Land below 10m	Straw Yellow	

MAP CLASS: **EROSION**
Assessment date: 11.10.96
Scale 1:25 000



MAP 36: BUILT HERITAGE AND ARCHAEOLOGY

Sites on the Coast Edge & Foreshore

NX 8166 4832
AIRDS HEUGH
Disused Mineshaft
Uncertain
Good
Nil

NX84NW 2
NX 8190 4834
AIRDS
Homestead
1st Mill BC/AD
Fair
Monitor

NX 8208 4836
AIRDS POINT
Sign Post
20th century
Good
Nil

NX84NW 7
NX 8278 4936
BALCARY LIFEBOAT STATION
Boat House & Slipway
Statutory Listed Building
19th century
Good
Nil

NX 8200 4994
BALCARY BAY
Fishing Stakes
19/20th century
Good
Nil

NX85SW 11
NX 8388 5032
HESTAN ISLAND
Manor House
Possibly 14th century
Uncertain; not visited
Nil

NX 8148 5070
AUCHENCAIRN BAY
Fishing Stakes
19/20th century
Good
Nil

NX 8140 5208
OLD TORR, AUCHENCAIRN BAY
Possible Enclosure
Uncertain
Uncertain; not visited
Nil

Sites in the Hinterland

NX84NW 3
NX 8210 4870
LITTLE AIRDS HILL
Fort
1st Mill BC/AD
Good
Nil

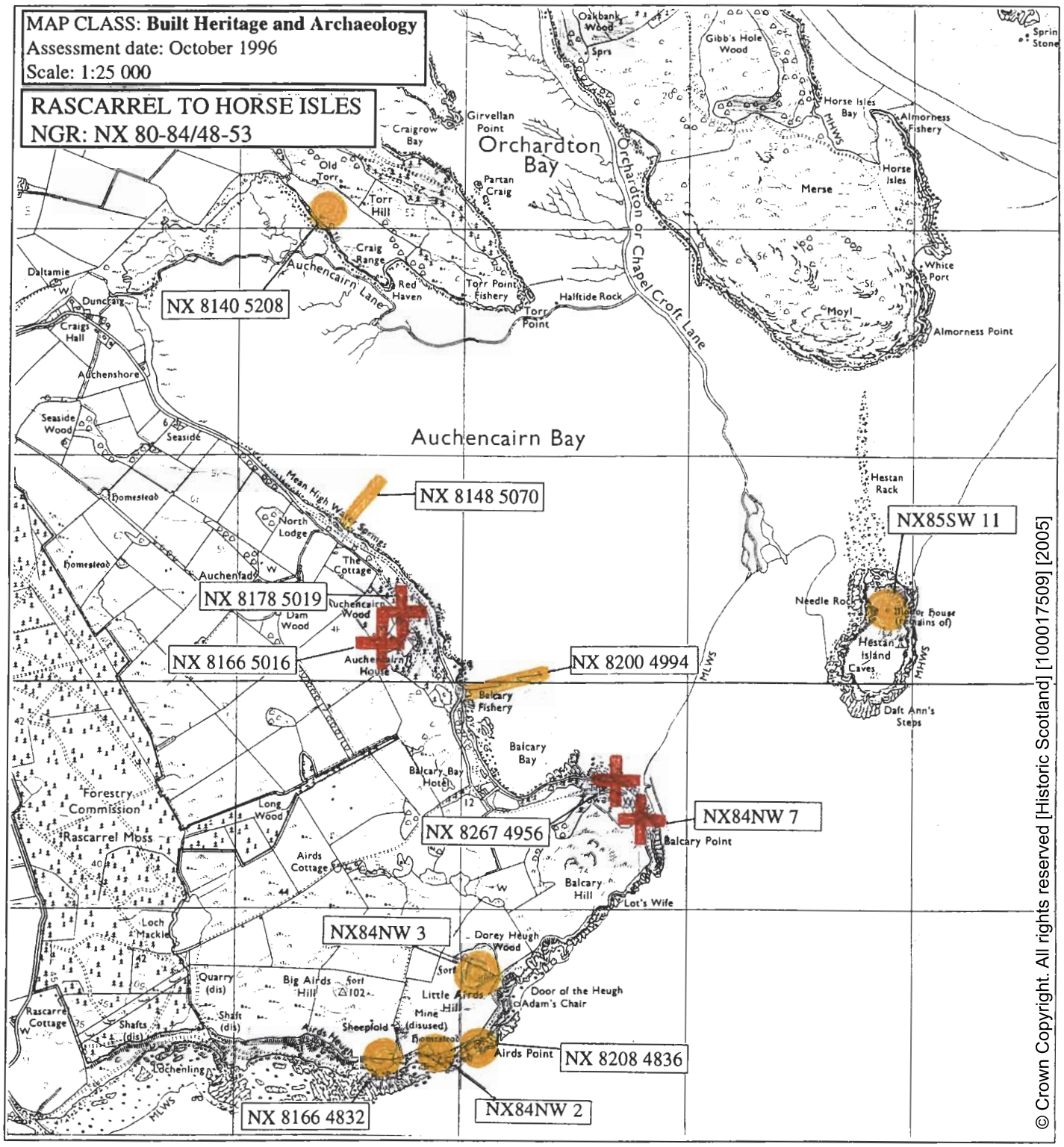
NX 8267 4956
THE TOWER, BALCARY
Tower House
Statutory Listed Building
Late 19th century
Good
Nil

NX 8166 5016
AUCHENCAIRN HOUSE
House
Statutory Listed Building
18th century
Good
Nil

NX 8178 5019
AUCHENCAIRN LODGE
Gatehouse
Statutory Listed Building
Late 19th century
Good
Nil

MAP CLASS: **Built Heritage and Archaeology**
Assessment date: October 1996
Scale: 1:25 000

RASCARREL TO HORSE ISLES
NGR: NX 80-84/48-53



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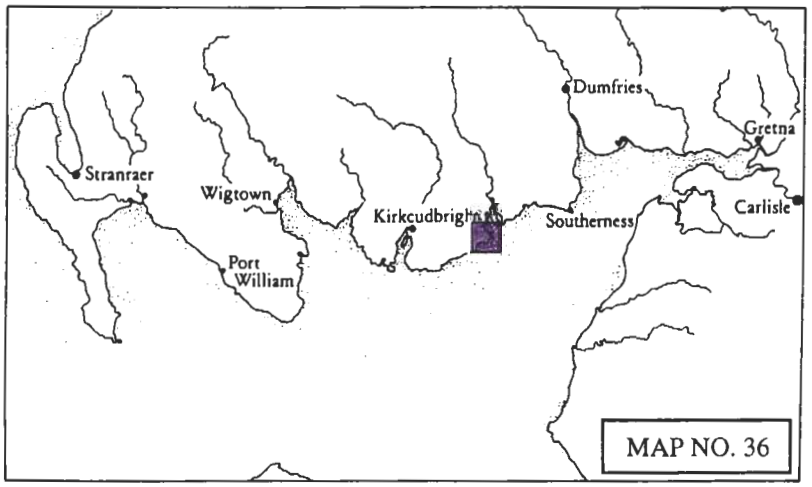
KEY

Site location	Symbol	Colour	Significance
NGR ref. - eg. NX 143 368	Roundel - Solid, (or area)	Red	Protected Ancient Monument
	Cross	Red	Listed Historic Building
	Roundel - Open, (or area)	Red	Monument formally proposed by Historic Scotland for designation
	Roundel - Solid, (or area)	Yellow	Other known Ancient Monument
NMRS ref. - eg. NX13 SW17	Dashed outline	Yellow	Gardens/Designed landscape
	Roundel - Solid, (or area)	Yellow	Undesignated wreck
	Area	Green	Insufficient information; more work needed
	Area	Blue	Probably archaeologically sterile



MAP NO. 36

MAP 37: HORSE ISLES TO CASTLEHILL POINT

Hinterland Geology and Coastal Geomorphology: This map depicts the head of Orchardton Bay, Rough Firth (classified as a fjord, SFR, page 52) and the lower tidal reach of the Urr Water. The region is characterised by an irregular coastline and shallow tidal-flats. The lower western shore of Rough Firth is covered with till and glacial drift deposits. Both till and marine sands occur together northwards to Palnackie. The same deposits overlie the hinterland southwards past Kippford. At Castlehill Point there are fluvioglacial drift deposits overlying this promontory headland. The coastal edge within this area consists of exposed rock, salt-marsh vegetated shingle and estuarine mud.

Erosion Class: Owing to the sheltered aspect within Rough Firth and the potential for high sediment loading down the Urr Water, parts of the shoreline on the west side of the Urr Water are both accreting and eroding. The shore line on the harder coastal edge is stable and eroding. Sheltered bays such as the one at Horse Isle Bay (NX 837524) trap sediment that becomes vegetated and increasingly stable.

Built Heritage & Archaeology: The archaeology of this section is predominantly distributed around the edges near the head of the bay, not in the low-lying mouth of the estuary. This section contains a large number of monuments relating to maritime activity, such as shipwrecks, quays, piers and jetties, a boathouse and launch and fishing stakes, providing testimony to the activity in Rough Firth during the last century (Graham & Truckell, 1977, 129). Of these monuments, only the shipwrecks, stranded nearer the current of the river Urr, display evidence of abrasion. The paucity of data available in the NMRS concerning these monuments prompts the recommendation of a survey and monitoring exercise. Also in the coastal edge zone, located on the eastern headland of Rough Firth Bay, and suffering limited abrasion, is the promontory fort of Castlehill Point. Of more significance to the condition of this site is the impact of a visitor path through the ramparts of the fort. Located in the immediate hinterland of the coast around Rough Firth Bay is the Mote of Mark, excavated in 1930 and 1973-74, and illustrating the extensive range of exchange networks of the Atlantic seaboard of the fifth and sixth centuries AD (Laing, 1973). No coastal erosion is evident.

Map 37: Hinterland Geology and Coastal Geomorphology

1. North of NORTH LODGE to OAKBANK WOOD
NX 814 520
6km
Low edge (Cliff < 5m, cliff >10m towards west)
Marine deposits and till
The upper tidal reach of Auchencairn Bay and Orchardton Bay. Both these areas contain marine sands and gravels at the bay heads. Torr Point (NX 823517) forms a rocky peninsula between Auchencairn Bay and the smaller Craigrow Bay. All three bays have well established salt-marsh which border low lying mud flats.

2. OAKBANK WOOD to north of GIBB'S HOLE WOOD
NX 844 540
3km
Cliff (< 10m)
Till over visible rock
This unit contains a peninsula that forms a division between Orchardton Bay and Rough Firth. Till overlies an irregular cliff-edge. The foreshore on both sides of the peninsula consists of greywackee rock platform which is broken only at White Port (NX 841519) and Horse Isles Bay (NX837524). Here the beaches are sand and shingle.

3. North of GIBB'S HOLE WOOD to GLEN BLACK STONE
NX 830 540
2km
Cliff (<5m)
Till and marine sands
This unit comprises the middle estuary of Rough Firth. Boulder clay and marine sands outcrop at the head of a small bay flanking Isle Point (NX 834546). Northwards, low tidal flats with small migrating channels is bounded by salt-marsh.

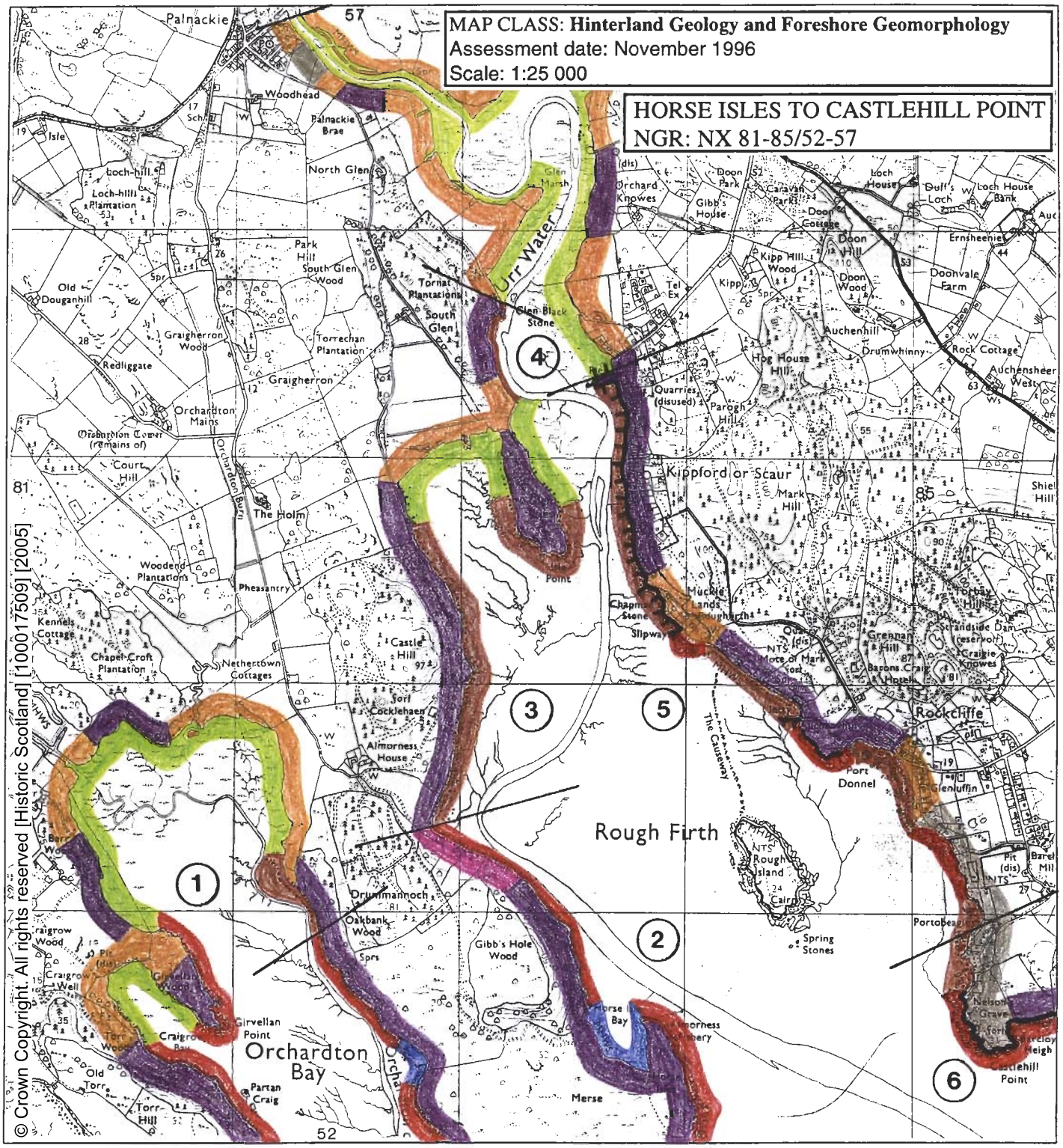
4. GLEN BLACK STONE to KIPFORD PIER (via PALNACKIE)
NX 834 560
5km
Low edge (< 5m)
Marine sands and till
This unit includes the lower tidal reach of the Urr Water up to Palnackie. The hinterland consists of marine sands and gravels on both sides of the river, with the exception of till that occurs at Orchard Knowes (NX 836562). Both sides of the river are colonised by salt-marsh vegetation.

5. KIPFORD ON SCAUR PIER to PORTOBEAGLE BAY
NX 844 540
3km
Low edge (< 5m)
Till and marine sands and gravels
Till occurs on the hinterland at Kipford on Scaur and at Port Donnel (NX 846537) where it outcrops over visible granite rock. Fluvioglacial drift outcrops to the south. The foreshore consists of a mixture of estuarine sands and mud.

6. PORTOBEAGLE BAY to NEEDLES EYE ARCH
NX 873 530
4.5km
Cliff (> 10m)
Till and fluvioglacial drift over visible rock
This is an exposed stretch of irregular coastline with a highly incised cliff-edge. Till occurs over visible rock platform with fluvioglacial deposits and marine sands and gravels evident towards to the east of the unit. The shoreline consists of precipitous cliffs with steeply folding Wenlock series greywackee with natural arches.

MAP CLASS: **Hinterland Geology and Foreshore Geomorphology**
Assessment date: November 1996
Scale: 1:25 000

HORSE ISLES TO CASTLEHILL POINT
NGR: NX 81-85/52-57



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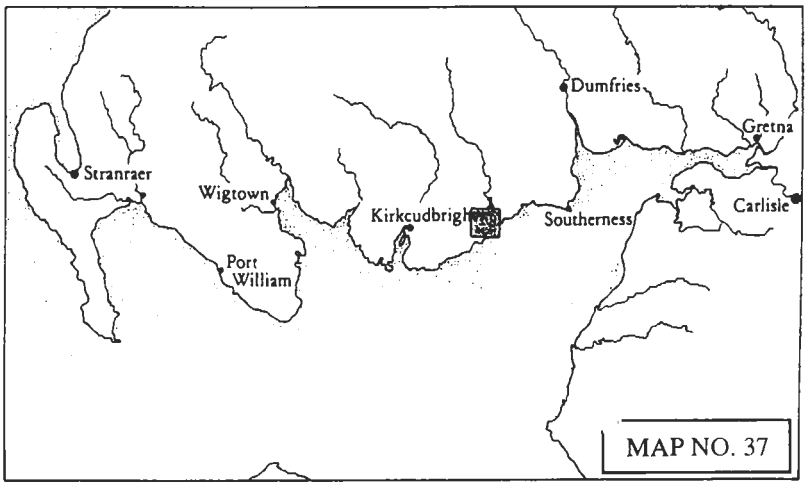
KEY

Hinterland Geology	Derwent Code	Colour
Drift, boulder clay	French Grey	
Drift, boulder clay over visible rock	Dark Violet	
Raised beach and marine deposits	Golden Brown	
Blown sand	Pink Madder Lake	
Glacial sand and gravel	Magenta	
Alluvium	Emerald Green	
Coastal Geomorphology		
Mainly rock platform	Deep vermilion	
Mainly sand	Ultramarine	
Mainly alluvial/marine mud	Venetian Red	
Marsh	May Green	
Coast Edge		
Low edge (<5m)	Thin black line	
Cliff (>5m)	Solid black line	
Man made barrier	Black line with spines	
Shingle beach	Small circles	000000
Human disturbance	Black carats	^^^^^^^



MAP 37: EROSION

1. Head of ROUGH FIRTH to CASTLE HILL POINT
NX 850 534
3km
Eroding or stable
This unit consists of the eastern side of Rough Firth and is fairly sheltered. The cliff-edge is irregular and incised. The MHWM is stable owing to the hard granite geology.

2. HEAD of ROUGH FIRTH
NX 830 555
1.8km
Accreting or stable
This region of the firth is saltmarsh and therefore stable.

3. North of ISLE POINT to PALNACKIE
NX 830 560
2.4km
Both accreting and eroding
Lower tidal reach of the Urr Water. The river edge consists of alluvium and salt marsh. Erosion is occurring along the sides of the banks due to channel migration. Mud is also accreting in parts.

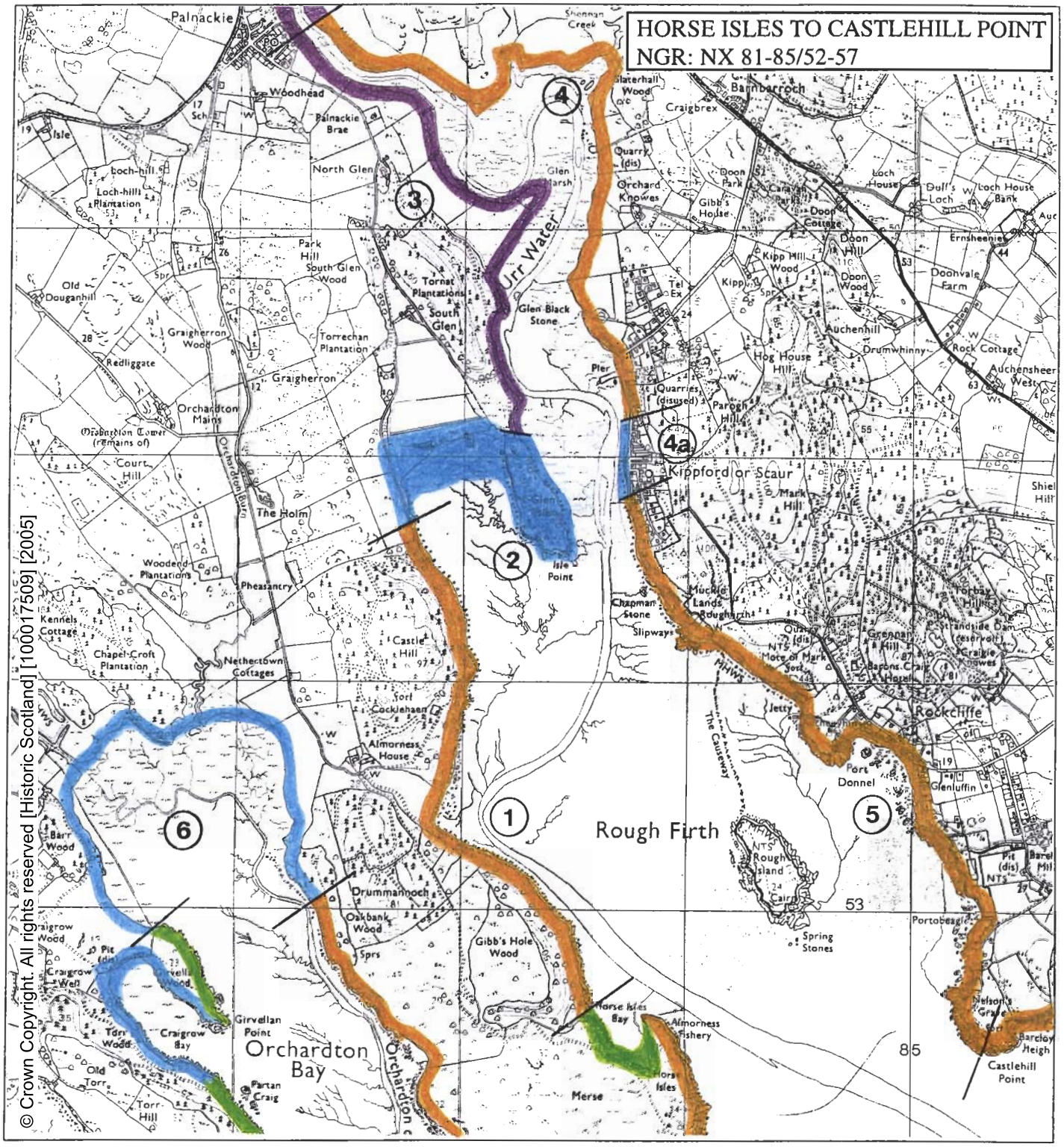
4. PALNACKIE (east bank) to north of KIPFORD
NX 836 556
3km
Eroding or stable
East bank of the lower tidal stretch of the Urr Water. Erosion of bank edges is occurring in parts. There is some erosion at the MHWM but in general this unit is stable. Mud is accreting and focused in the curves.

4a. KIPPFORD
NX 827 550
0.4 km
Accreting and stable
The shoreline at Kippford is defended by a concrete sea wall and vegetated mud banks.

5. KIPFORD to CASTLE HILL POINT
NX 850 537
3.km
Stable and eroding
This section of the coastline is the lower estuary of Rough Firth. The foreshore consists of sand with an admixture of alluvium, shingle and boulders. Parts of the shore are prone to scouring at the HWM, generally this shoreline appears mainly stable.

6. North of GIRVELLAN WOOD to north of OAKBANK WOOD
NX 817 537
2.1km
Stable or accreting
The upper reach of Orchardton Bay which is stabilised by saltmarsh. High sediment loads from the Loch Ling Burn are leading to mud accretion within the bay.

HORSE ISLES TO CASTLEHILL POINT
NGR: NX 81-85/52-57



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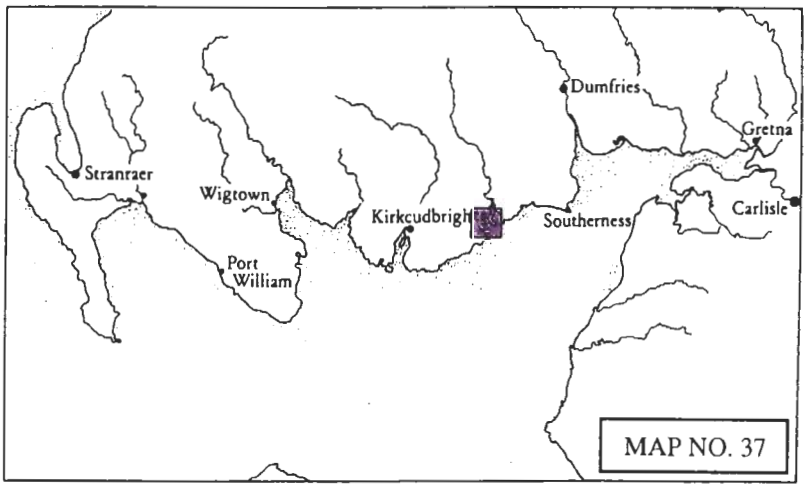
KEY

Erosion class	Derwent Code	Colour
Definitely accreting	Prussian Blue	
Accreting/stable	Light Blue	
Stable	Grass Green	
Stable/eroding	Deep Chrome	
Definitely eroding	Deep Vermilion	
Both accreting and eroding	Imperial Purple	
No access	Blank	
Land below 10m	Straw Yellow	

MAP CLASS: **EROSION**
Assessment date: 14.10.96
Scale 1:25 000



MAP 37: BUILT HERITAGE AND ARCHAEOLOGY

Sites on the Coast Edge & Foreshore

NX 8284 5338
ALMORNESS
Ruins
Uncertain
Good
Nil

NX 8359 5633
ORCHARD KNOWES
Quay
Uncertain
Poor
Monitor

NX 8358 5617
ORCHARD KNOWES
Boat House & Launch
19/20th century
Good
Nil

NX 84 53
ROUGH ISLAND
Causeway
Uncertain
Good
Nil

NX 8455 5293
ROUGH ISLAND
Fishing Stakes
19/20th century
Good
Nil

NX85SE 1
NX 8541 5242
CASTLEHILL POINT
Promontory Fort
Scheduled Ancient Monument
1st Mill BC/AD
Fair
Monitor

NX 8319 5562
SOUTH GLEN
Shipwreck
Uncertain
Poor
Survey & Monitor

NX85NW 8044
NX 8342 5547
KIPPFORD
Shipwreck - Barge
Poor
Survey & Monitor

NX85NW 8043
NX 8361 5540
KIPPFORD
Shipwrecks
Uncertain
Poor
Survey & Monitor

NX85NW 20
NX 8360 5535
KIPPFORD PIER
Pier
Uncertain
Good
Nil

NX 8444 5384
ROCKCLIFFE
Jetty
Uncertain
Good
Nil

Sites in the Hinterland

NX 8294 5546
SOUTH GLEN
DISUSED QUARRY
Uncertain
Good
Nil

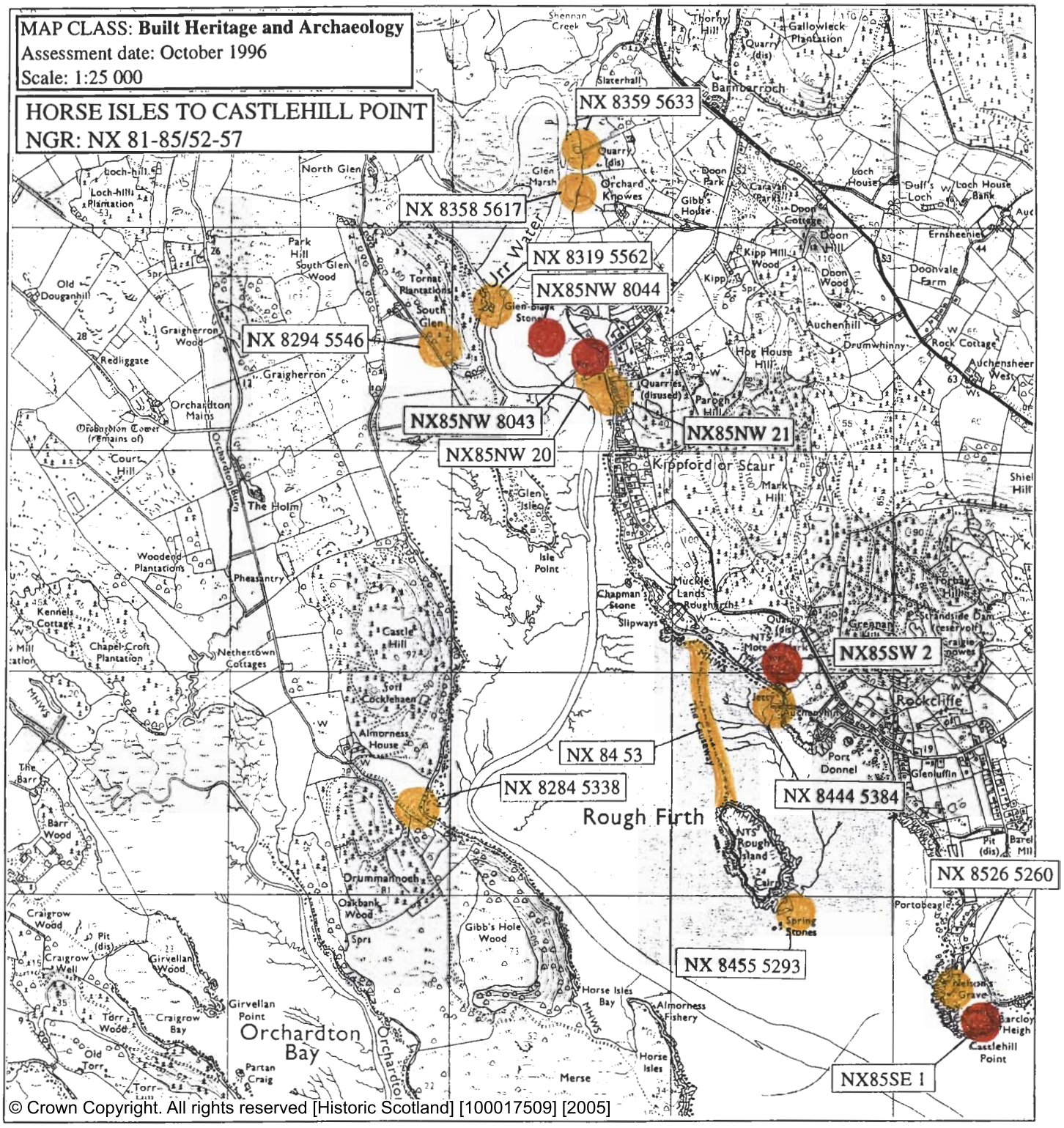
NX85NW 21
NX 8368 5530
KIPP QUARRIES, KIPPFORD
Quarries
Uncertain
Good
Nil

NX85SW 2
NX 8450 5403
MOTE OF MARK
Fort
Scheduled Ancient Monument
5/6th centuries AD
Good
Nil

NX 8526 5260
NELSON'S GRAVE, ROCKCLIFFE
Gravestone
19th century
Good
Nil

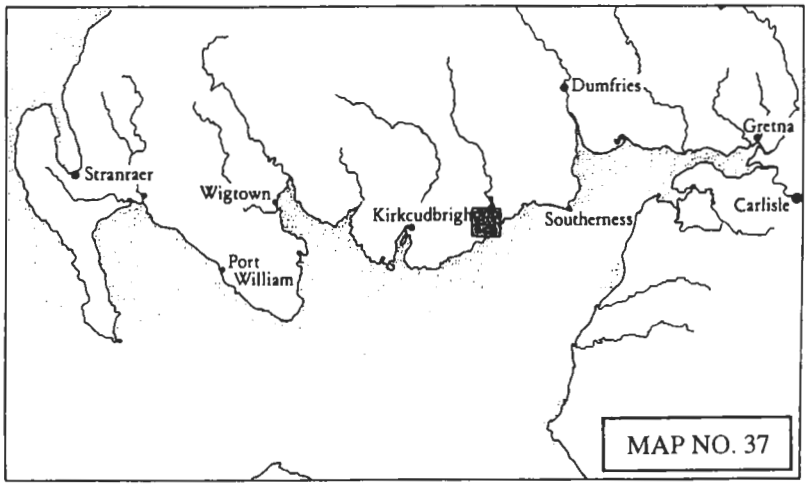
MAP CLASS: **Built Heritage and Archaeology**
Assessment date: October 1996
Scale: 1:25 000

HORSE ISLES TO CASTLEHILL POINT
NGR: NX 81-85/52-57



KEY

Site location	Symbol	Colour	Significance
	Roundel - Solid, (or area)	Red	Protected Ancient Monument
NGR ref. - eg.	Cross	Red	Listed Historic Building
NX 143 368	Roundel - Open, (or area)	Red	Monument formally proposed by Historic Scotland for designation
	Roundel - Solid, (or area)	Yellow	Other known Ancient Monument
NMRS ref. - eg.	Dashed outline	Yellow	Gardens/Designed landscape
NX13 SW17	Roundel - Solid, (or area)	Yellow	Undesignated wreck
	Area	Green	Insufficient information; more work needed
	Area	Blue	Probably archaeologically sterile



MAP 38: GLEN ISLE TO PARKER'S POOL

Hinterland Geology and Coastal Geomorphology: This area comprises the upper tidal reach of the Urr Water and north towards Dalbeattie. Beyond Palnackie the Urr Water meanders in a series of loops defended by flood defences. Alluvium and riverine silts dominate this section of river valley. Marine sands and gravels are common south of Palnackie showing that marine inundation has occurred, and is possibly associated with the Main Holocene Marine Transgression.

Erosion Class: The lower tidal reach of the Urr Water up towards Dalbeattie is both accreting and eroding. This is confined to the shifting river channel loops. Erosion of the faster river sections (e.g. on the inside of tight bends) is a common trend. From Palnackie to Kipford the Urr Water widens into a larger area incised with small creeks. These are prone to erosion on the whole they are stable owing to salt-marsh vegetation.

Built Heritage & Archaeology: A quay and a motte lie on the banks of the river Urr in this section. The motte is not suffering erosion. The quay at Kirkennan, however, is affected by erosion and monitoring is recommended.

Map 38: Hinterland Geology and Coastal Geomorphology

1. North of GIBB'S HOLE WOOD to GLEN BLACK STONE
NX 830 540
2km
Cliff (<5m)
Till and marine sands
This unit comprises the middle estuary of Rough Firth. Boulder clay and marine sands outcrop at the head of a small bay flanking Isle Point (NX 834546). Northwards, low tidal flats with small migrating channels is bounded by salt-marsh.

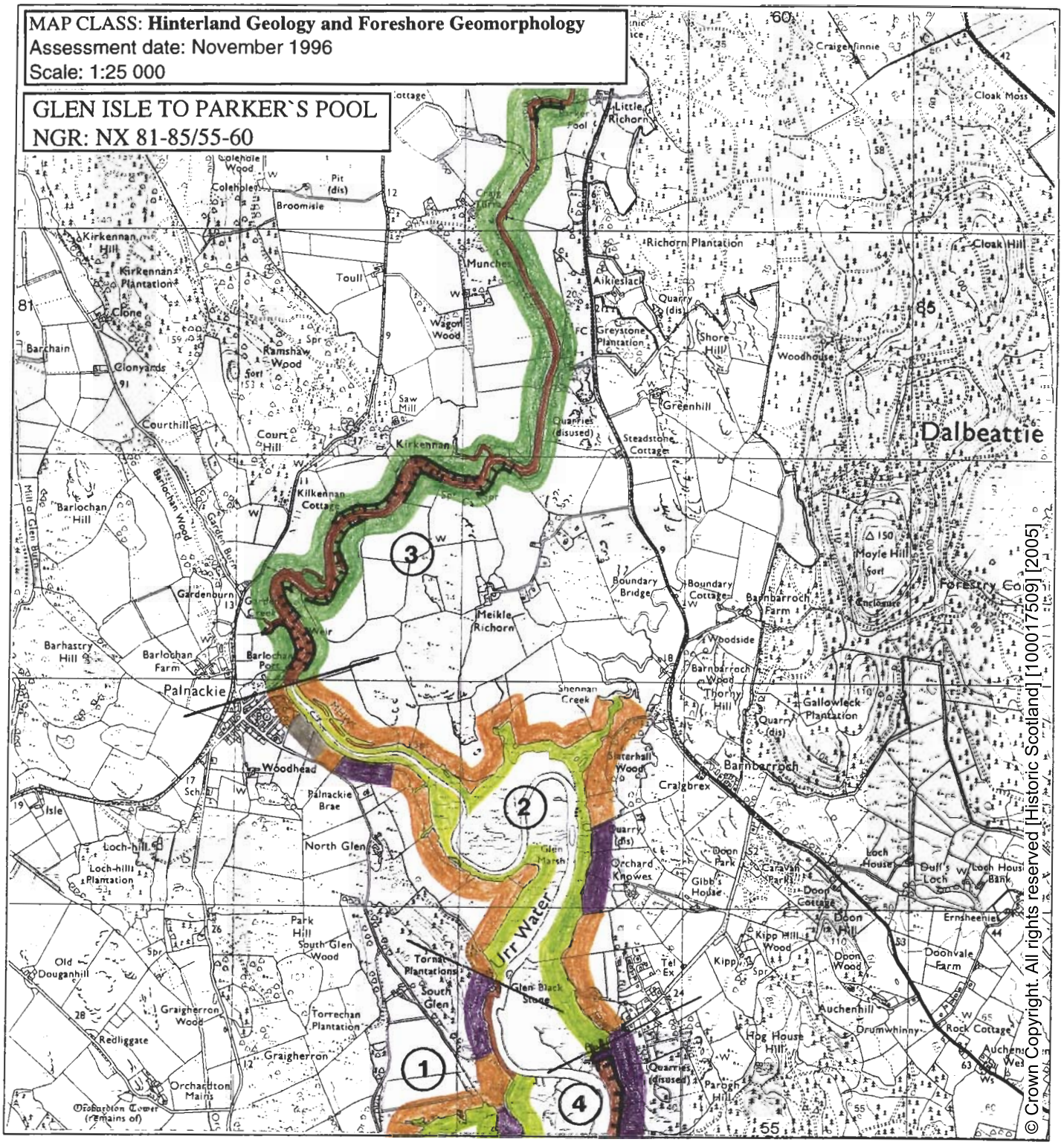
2. GLEN BLACK STONE to KIPFORD PIER (via PALNACKIE)
NX 834 560
5km
Low edge (< 5m)
Marine sands and till
This unit includes the lower tidal reach of the Urr Water up to Palnackie. The hinterland consists of marine sands and gravels on both sides of the river, with the exception of till that occurs at Orchard Knowes (NX 836562). Both sides of the river are colonised by salt-marsh vegetation.

3. PALNACKIE to DALBEATTIE
(Both banks of the Urr Water)
NX 830580
8km
Low edge(< 5m)
Alluvium
This unit consist of both sides of the Urr water as far as Dalbeattie. The hinterland geology is alluvium formed within a river valley. The river meanders in a series of gradual loops. The banks are covered with fine silts and mud.

4. KIPFORD to PORTOBEAGLE BAY
NX 844 540
3km
Low edge (< 5m)
Till and marine sands and gravels
Till occurs on the hinterland at Kipford on Scaur and at Port Donnel (NX 846537) where it outcrops over visible granite rock. Fluvioglacial drift outcrops to the south. The foreshore consists of a mixture of estuarine sands and mud.

MAP CLASS: **Hinterland Geology and Foreshore Geomorphology**
Assessment date: November 1996
Scale: 1:25 000

GLEN ISLE TO PARKER`S POOL
NGR: NX 81-85/55-60



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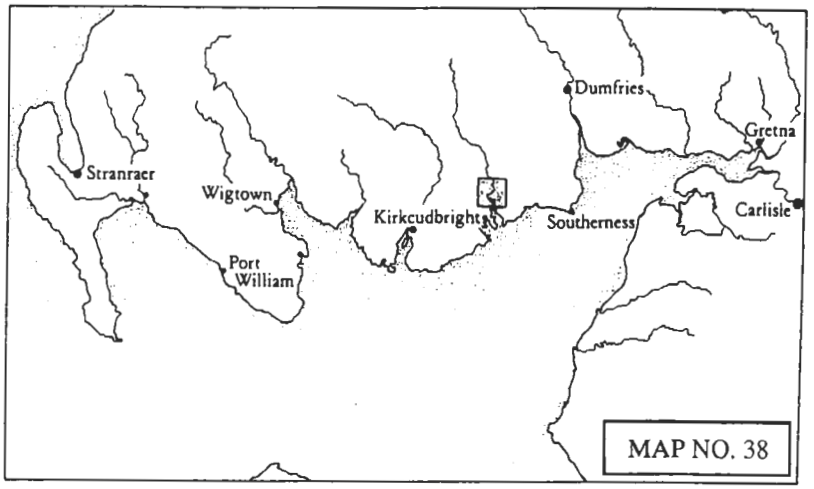
KEY

Hinterland Geology	Derwent Code	Colour
Drift, boulder clay	French Grey	
Drift, boulder clay over visible rock	Dark Violet	
Raised beach and marine deposits	Golden Brown	
Blown sand	Pink Madder Lake	
Glacial sand and gravel	Magenta	
Alluvium	Emerald Green	
Coastal Geomorphology		
Mainly rock platform	Deep vermilion	
Mainly sand	Ultramarine	
Mainly alluvial/marine mud	Venetian Red	
Marsh	May Green	
Coast Edge		
Low edge (<5m)	Thin black line	
Cliff (>5m)	Solid black line	
Man made barrier	Black line with spines	
Shingle beach	Small circles	oooooo
Human disturbance	Black carats	^^^^^^^

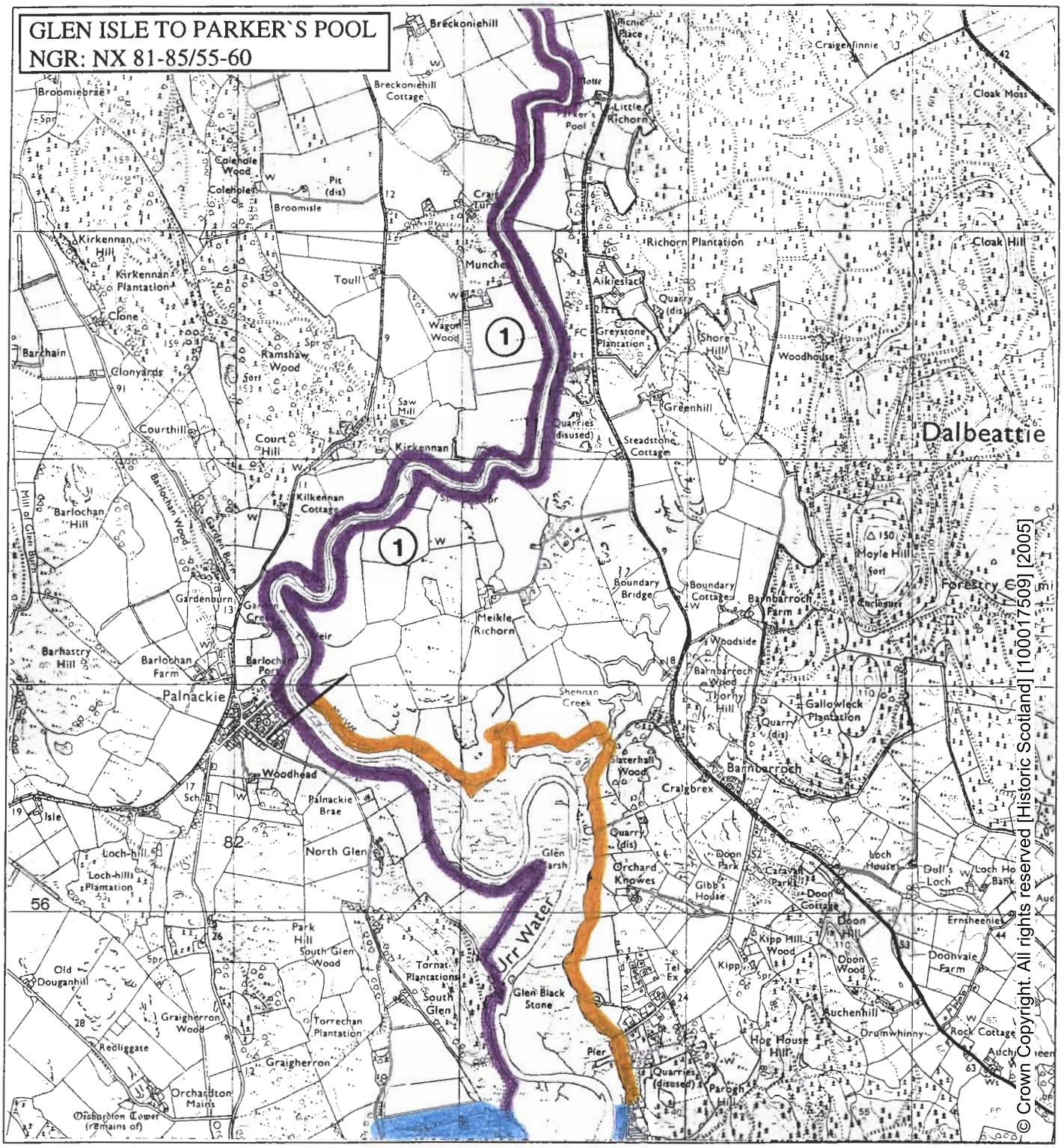


MAP 38: EROSION

---

1. PALNACKIE to DALBEATTIE DOCK
NX 826 567
5.5km
Accreting and eroding
Meandering tidal upper reach of the Urr Water.
Erosion is occurring on the inside of the curves.
Mud accretion is occurring on the slower stretches
of the river.

GLEN ISLE TO PARKER`S POOL
NGR: NX 81-85/55-60



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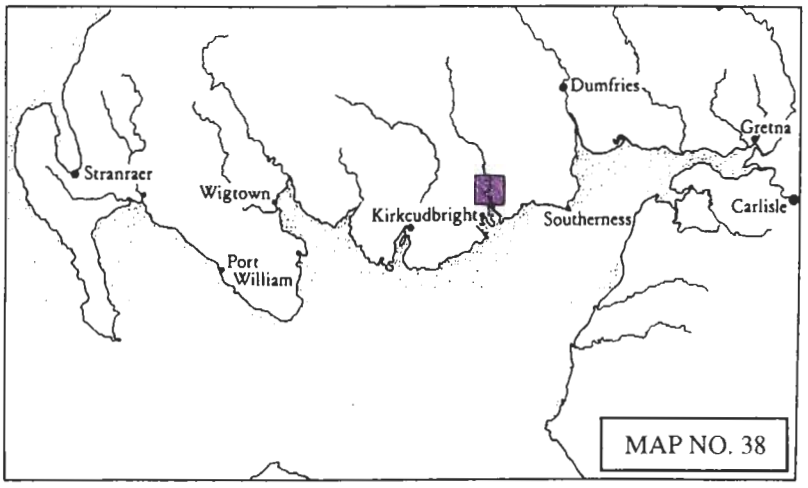
KEY

Erosion class	Derwent Code	Colour
Definitely accreting	Prussian Blue	
Accreting/stable	Light Blue	
Stable	Grass Green	
Stable/eroding	Deep Chrome	
Definitely eroding	Deep Vermilion	
Both accreting and eroding	Imperial Purple	
No access	Blank	
Land below 10m	Straw Yellow	

MAP CLASS: **EROSION**
Assessment date: 10.10.96
Scale 1:25 000

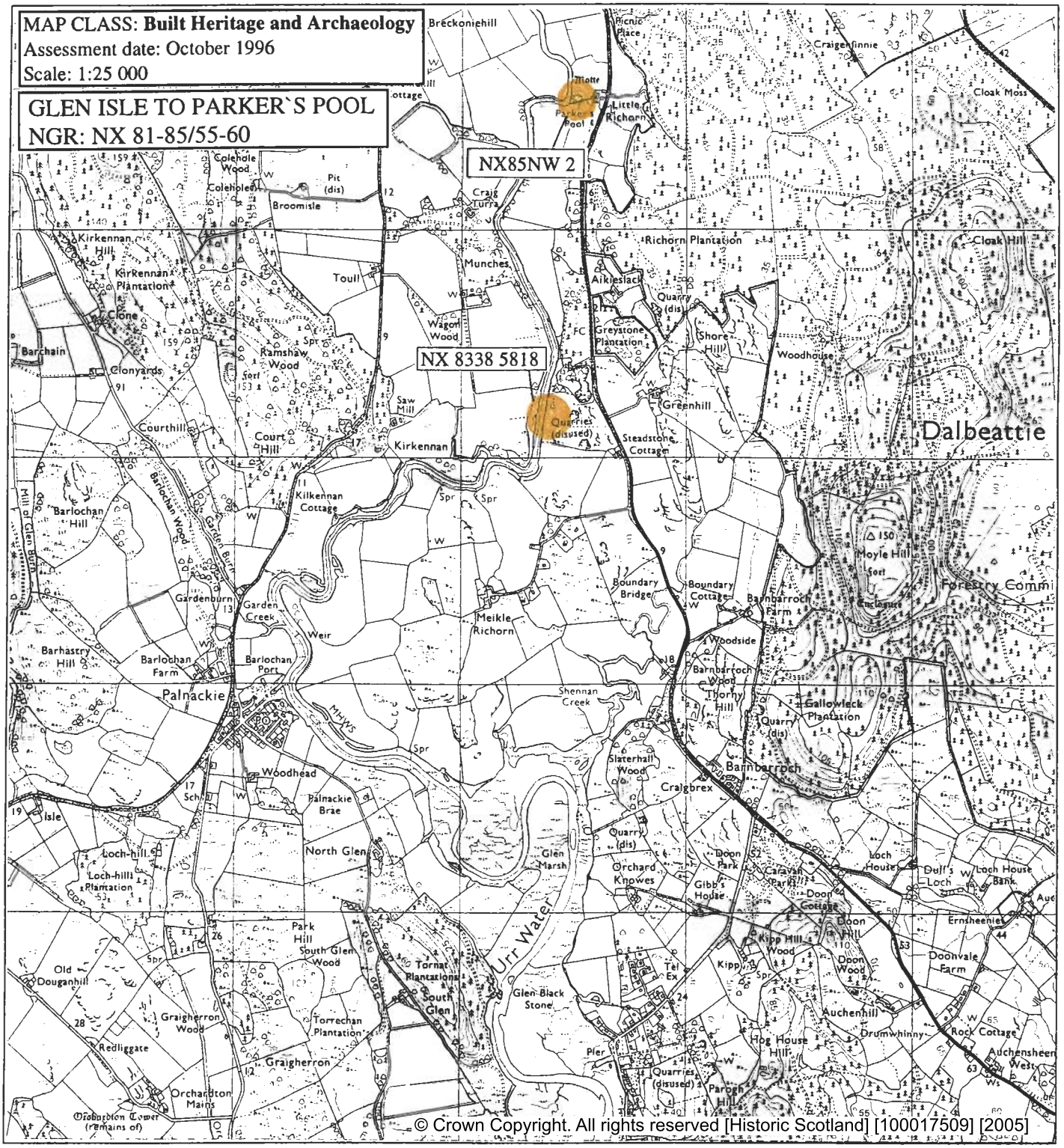


MAP 38: BUILT HERITAGE AND ARCHAEOLOGY

Sites on the Coast Edge & Foreshore	Sites in the Hinterland
NX85NW 2 NX 8351 5949 LITTLE RICHORN Motte 12/13th century Good Nil	None
NX 8338 5818 KIRKENNAN Quay, Building & Trackway Uncertain Fair Monitor	

MAP CLASS: **Built Heritage and Archaeology**
Assessment date: October 1996
Scale: 1:25 000

GLEN ISLE TO PARKER`S POOL
NGR: NX 81-85/55-60



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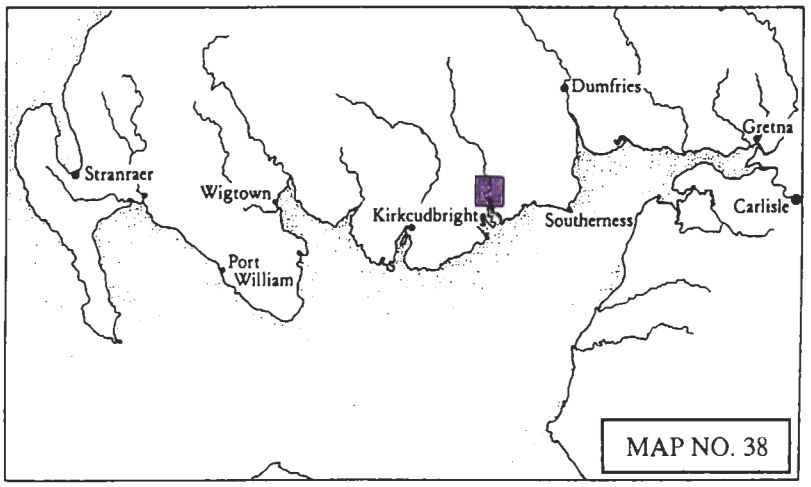
KEY

Site location	Symbol	Colour	Significance
	Roundel - Solid, (or area)	Red	Protected Ancient Monument
NGR ref. - eg.	Cross	Red	Listed Historic Building
NX 143 368	Roundel - Open, (or area)	Red	Monument formally proposed by Historic Scotland for designation
	Roundel - Solid, (or area)	Yellow	Other known Ancient Monument
NMRS ref. - eg.	Dashed outline	Yellow	Gardens/Designed landscape
NX13 SW17	Roundel - Solid, (or area)	Yellow	Undesignated wreck
	Area	Green	Insufficient information; more work needed
	Area	Blue	Probably archaeologically sterile



MAP 39: DALBEATTIE

Hinterland Geology and Coastal Geomorphology: This map sheet depicts a parcel of the Urr Water to the south-east of Dalbeattie. The river is flanked by alluvium deposits laid down in a valley basin. Riverine silts and mud are contained within the upper tidal reach of the river channel.

Erosion Class: The Urr Water has a high suspended sediment load draining through carse and tills. Accreting and eroding conditions apply which also apply to the lower tidal reach of the Urr Water, (e.g. Map 38). The fact that Dalbeattie Quay has become silted up does rather suggest that the overall balance, however, might lie towards accretion rather than erosion.

Built Heritage & Archaeology: This section contains the old quays of Dalbeattie (Graham & Truckell, 1977, 121-123), which now due to silting, are disused. Limited erosion of the quay walls of Dalbeattie Port was evident.

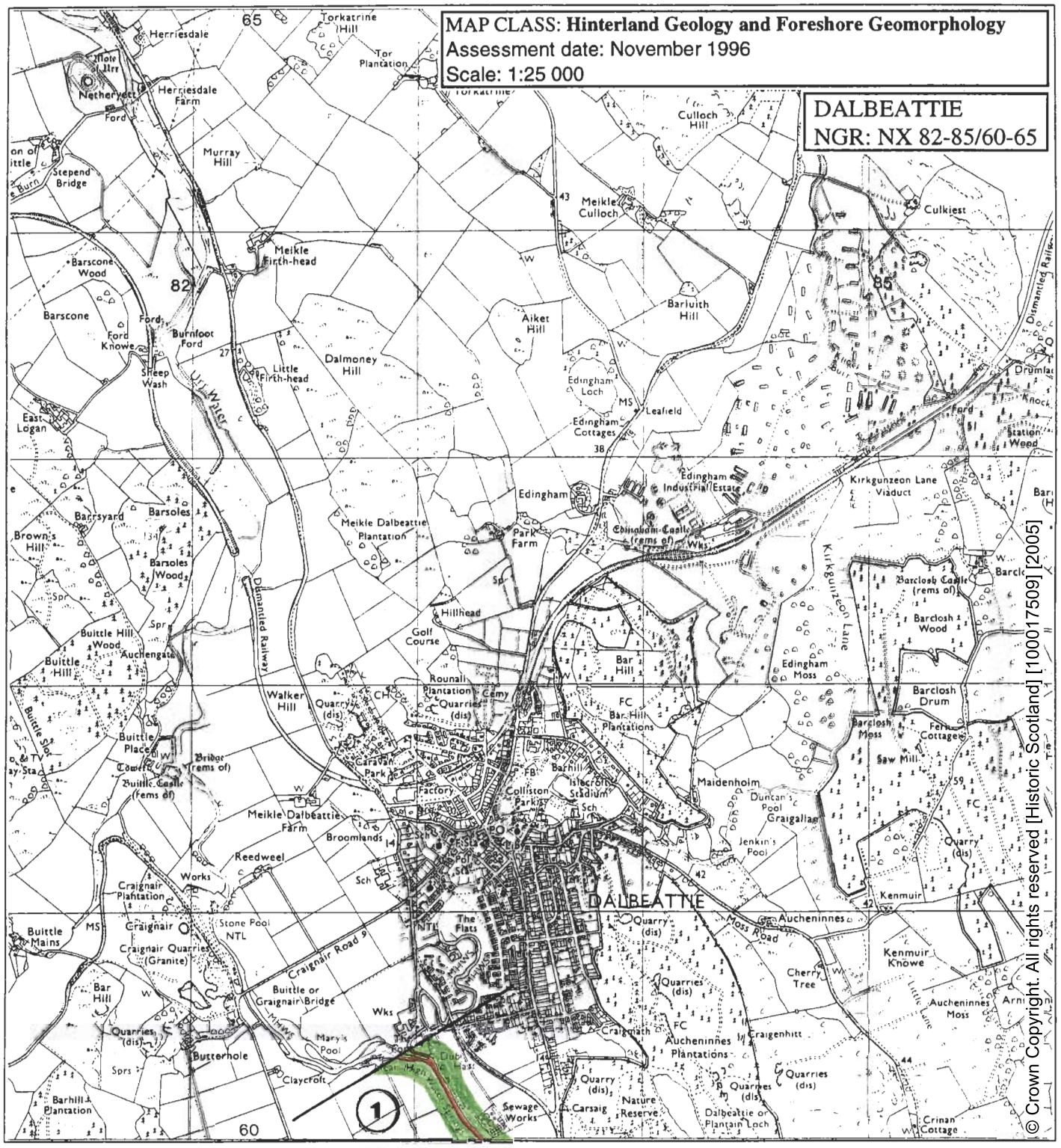
Map 39: Hinterland Geology and Coastal Geomorphology

---

1. PALNACKIE to DALBEATTIE
(Both banks of the Urr Water)
NX 830580
8km
Low edge(< 5m)
Alluvium
This unit consist of both sides of the Urr water as far as Dalbeattie. The hinterland geology is alluvium formed within a river valley. The river meanders in a series of gradual loops. The banks are covered with fine silts and mud.

MAP CLASS: **Hinterland Geology and Foreshore Geomorphology**
Assessment date: November 1996
Scale: 1:25 000

DALBEATTIE
NGR: NX 82-85/60-65



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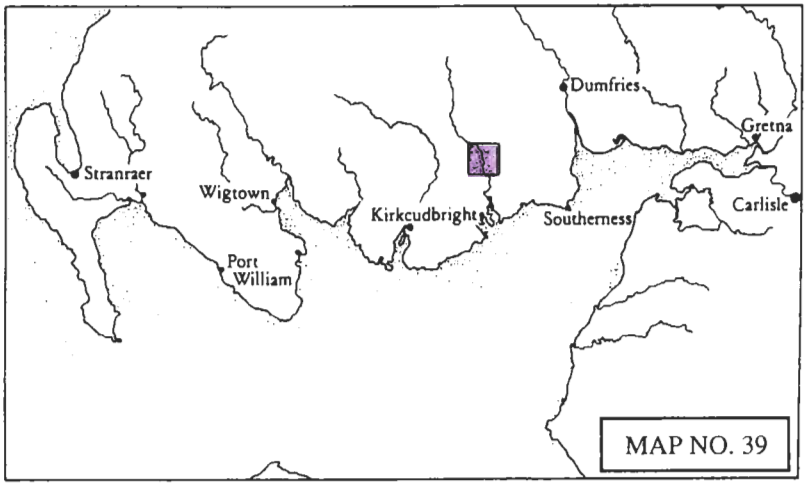
KEY

Hinterland Geology	Derwent Code	Colour
Drift, boulder clay	French Grey	
Drift, boulder clay over visible rock	Dark Violet	
Raised beach and marine deposits	Golden Brown	
Blown sand	Pink Madder Lake	
Glacial sand and gravel	Magenta	
Alluvium	Emerald Green	
Coastal Geomorphology		
Mainly rock platform	Deep vermilion	
Mainly sand	Ultramarine	
Mainly alluvial/marine mud	Venetian Red	
Marsh	May Green	
Coast Edge		
Low edge (<5m)	Thin black line	
Cliff (>5m)	Solid black line	
Man made barrier	Black line with spines	
Shingle beach	Small circles	ooooooo
Human disturbance	Black carats	^^^^^^^



MAP 39: EROSION

---

1. PALNACKIE to DALBEATTIE DOCK
NX 826 567
5.5km
Accreting and eroding
Meandering tidal upper reach of the Urr Water.
Erosion is occurring on the inside of the curves.
Mud accretion is occurring on the slower stretches
of the river.

DALBEATTIE
NGR: NX 82-85/60-65

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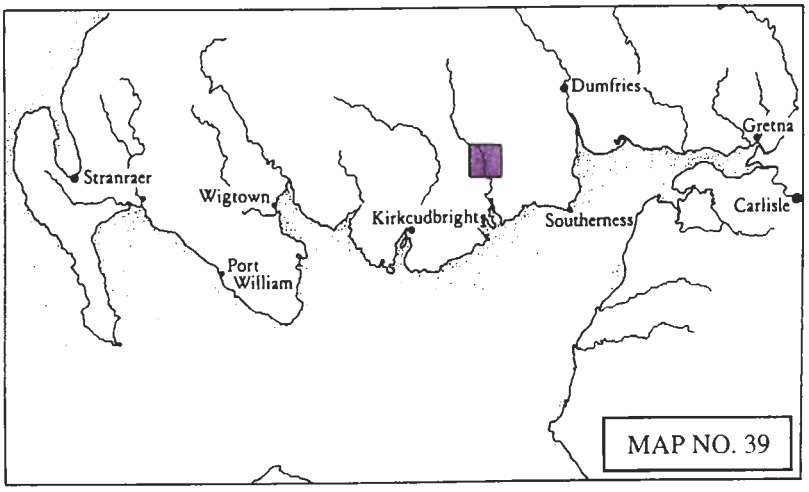
KEY

Erosion class	Derwent Code	Colour
Definitely accreting	Prussian Blue	
Accreting/stable	Light Blue	
Stable	Grass Green	
Stable/eroding	Deep Chrome	
Definitely eroding	Deep Vermilion	
Both accreting and eroding	Imperial Purple	
No access	Blank	
Land below 10m	Straw Yellow	

MAP CLASS: **EROSION**
Assessment date: 10.10.96
Scale 1:25 000



MAP NO. 39

MAP 39: BUILT HERITAGE AND ARCHAEOLOGY

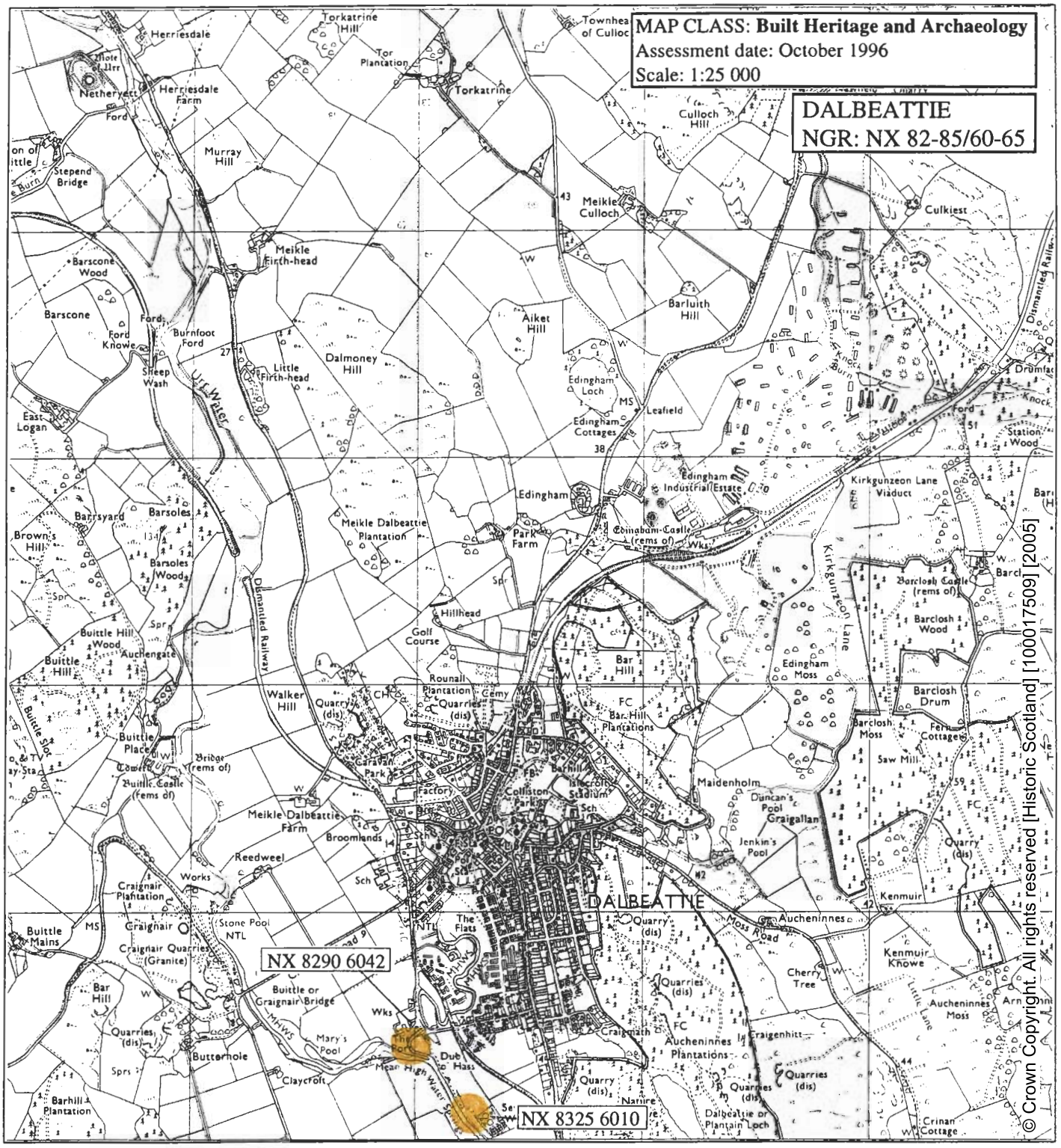
Sites on the Coast Edge & Foreshore

NX 8290 6042
DALBEATTIE PORT
Quay Walls
Uncertain
Fair
Monitor

NX 8325 6010
DALBEATTIE
Quay
Uncertain
Good
Nil

Sites in the Hinterland

None



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KEY

Site location	Symbol	Colour	Significance
NGR ref. - eg. NX 143 368	Roundel - Solid, (or area)	Red	Protected Ancient Monument
	Cross	Red	Listed Historic Building
	Roundel - Open, (or area)	Red	Monument formally proposed by Historic Scotland for designation
	Roundel - Solid, (or area)	Yellow	Other known Ancient Monument
NMRS ref. - eg. NX13 SW17	Dashed outline	Yellow	Gardens/Designed landscape
	Roundel - Solid, (or area)	Yellow	Undesignated wreck
	Area	Green	Insufficient information; more work needed
	Area	Blue	Probably archaeologically sterile